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ON

THE RISE AND PROGRESS OF LARYNGOLOGY:

ITS RELATION TO GENERAL MEDICINE AND ITS POSITION IN THE MEDICAL CURRICULUM.

DELIVERED BEFORE THE MANCHESTER MEDICAL SOCIETY

BY

SIR WILLIAM MILLIGAN, M.D., C.M.,

AURIST AND LARYNGOLOGIST, ROYAL INFIRMARY, MANCHESTER; LECTURER ON DISEASES OF THE THROAT AND EAR, VICTORIA UNIVERSITY, MANCHESTER; PRESIDENT, LARYNGOLOGICAL SECTION, ROYAL SOCIETY OF MEDICINE.

SPECIALISM in medicine or surgery is no new-fangled idea. Herodotus, the Father of History, writing more than 2,500 years ago of the highly developed state of specialism amongst the Egyptians, says:

"Physicke is so studied and practised with the Egyptians that every disease has its several physician who striveth to excel in healing that one disease and not to be expert in curing many. Whereof it cometh that every corner of that Country is full of physicians, some for the eyes, others for the head, many for the teeth, and not a few for the stomach and the inwards."

In those far-off days the human body was divided into some thirty-six regions, with specialists for each one of them, and history records that jealousy existed amongst specialists when they invaded one another's territory—a state of affairs not unknown even to-day. In the Ebers Papyrus, compiled about 1550 B.C., the anatomy and physiology of the nasal passages are described as follows: "There are four vessels in both nostrils, of which two carry blood and two mucus. Once air has entered the nose it is lost sight of; it goes to the heart and to the rectum."

Closely allied with Egyptian medicine was that of the Chaldeans and Assyrians, tainted very largely, however, with witchcraft and sorcery—for example, "gargling with the milk of a sheep helps the tonsils and the fauces, anginas are helped by a goose's gall mixed with elaterium and honey, by the brain of an owl, and by the ashes of a swallow soaked in hot water."

In *La Médecine du Talmud* we are told that a transverse incision of the trachea is fatal, whereas a longitudinal one is not.

Among the Hindu races the surgery of the throat attracted much attention and many weird forms of treatment. Wise, in his book on the Hindu system of medicine, describes a method of tonsillotomy which aimed at removing a third part only with the knife—"if all is cut the patient will die of haemorrhage." The removal of foreign bodies from the food and air passages was not only attempted but accomplished, the method consisting in passing a hot iron through a metallic tube to dissolve or soften and so to remove it. I can find no mention of the end-results of such drastic performances—no mention of any resulting stenosis or of adhesions; evidently there were no follow-up-case committees at work in those days.

Although Homer does not mention the word "larynx," it is freely mentioned by other Greek writers. Aristotle (384–322 B.C.) describes it as the organ through which the voice and the breath pass. "It is the voice and larynx which emit vowels; it is the tongue and lips which form the consonants or the aphonic letters."

Hippocrates, who, according to Celsus, was the first medical specialist, described the epiglottis as a process in the form of an ivy leaf which prevented liquid entering the larynx and kept it in the pharynx; and of the trachea he said that it was cartilaginous, surrounded by smooth rings, and contained but little blood.

The etiology and treatment of nasal polypi has from time immemorial even up to the present day been responsible for much controversy. Cato the Censor, writing 232 B.C., says:

"If there is a polypus in the Nose rub together some wild cabbage leaves in the hand, place them in the nose and draw up the breath as much as you can. In 3 days the polypus will fall away. Nevertheless for some days do the same so that you may render the roots of the polypus entirely healthy."

Celsus used a sharp spatula-shaped instrument to separate the growth from the underlying bone and then extracted it with a hook. Hippocrates, on the other hand, recommended tying a sponge to a string, passing the string through the nasal passages and out through the mouth, in order forcibly to draw the polypus from its attachments. For hard growths the loop of a sinew was passed round the attachment of the growth and then tightened. Subsequently cauterization was employed, a hot iron being passed through a metal tube and the raw surfaces seared. Following one or other of these methods of removal he advised the use of copperas powder and the insertion of tents smeared with oil and honey into the nostrils. He says: "Those diseases which medicines do not cure the knife cures; those which the knife cannot cure fire cures; those which fire cannot cure are to be reckoned wholly incurable."

Curiously enough, in the Hippocratic treatises there is no mention of tonsillotomy, but in The Prognostics, No. 23, the operation of uvulotomy is described: "When the uvula alone is inflamed seize it with the finger, press it up against the palate and cut off the end." Other Greek writers, however, describe tonsillotomy in detail. Thus Albucasis writes:

"If they [the tonsils] are of a dark colour and of slight sensibility do not touch them with the knife, if red and the base is broad do not touch with a knife for fear of haemorrhage but delay until it has ruptured for then thou canst perforate it or it will break of itself. But if it is of a white colour, round and has a slender base this is the kind which is suitable and thou shouldst cut it."

That great bugbear of the rhino-laryngologist, atrophic rhinitis or ozaena, was not only recognized as a distinct pathological entity but was vigorously treated. Celsus says:

"If these ulcers are around the openings and have many crusts and have a foul odour which variety the Greeks call Ozaena it should be recognized that it is hardly possible to cure this disease. In the nostrils let honey be applied with a small amount of resin of turpentine which may be used on a probe wrapped with wool. By the use of this the crusts are loosened and may then be removed by the use of sternutatories."

He advised leaving pledgets of lint saturated with medicaments in the nostrils, twice a day in winter and spring, and thrice a day in summer and autumn.

The first definite description of tracheotomy is from the works of Antyllus, who lived during the reign of Hadrian (117–138 A.D.). Adams translates as follows:

"In cases of cynanche we entirely disapprove of this operation because the incision is wholly unavailing when all the arteries (the whole of the trachea and bronchi) and the lungs are affected, but in inflammation about the mouth and palate, and in cases of indurated tonsils which obstruct the mouth of the windpipe, as the trachea is unaffected it will be proper to have recourse to pharyngotomy in order to avoid the risk of suffocation. When therefore we engage in the operation we slit open a part of the arteria aspera (for it is dangerous to divide the whole) below the top of the windpipe about the third or fourth ring. For this is a convenient situation as being free of flesh and because the vessels are placed at a distance from the part which is divided. Wherefore bending the patient's head backwards so as to bring the windpipe better into view we are to make a transverse incision between two of the rings so that it may not be the cartilage which is divided but the membrane connecting the cartilages. If one be more timid in operating one may first stretch the skin with a hook and divide it, and then removing the vessels aside if they come in the way make the incision."

Galen described twelve intralaryngeal muscles—that is, six pairs—and enumerated three cartilages of the larynx: the thyroid, the cricoid, and the arytenoid; the latter he supposed was a single cartilage. He claims to have discovered and described the ventricles of the larynx. He describes also the vocal cords as a membranous substance so constituted as to resist the impact of the air and lubricated by mucus to prevent injury from the vibrations of a dry surface. He was the first to describe the recurrent laryngeal nerves. He considered that chilling of the recurrent nerves during operations damaged the voice, and he therefore advised against operations in this region during cold weather. He recognized the dependence of diseases of the larynx upon affections of the parts above, but explained it on the assumption that the brain was the common origin of all catarrhs. Paulus Aegineta introduced the knotted-string method for the removal of polypi.

"Taking then a thread moderately thick like a cord, and having tied knots upon it at the distance of two or three fingerbreadths, we introduce it into the opening of a double-headed specillum [probe] and we push the other extremity of the specillum upward to the ethmoid opening."

In the great medical school of Salerno the surgery of the throat came in for a considerable share of attention. Roger of Parma, whose *Practica Chirurgica* saw the light about the

beginning of the thirteenth century, thus describes the treatment of a tonsillar abscess:

"Seat the patient before you and press his tongue down in his open mouth with an instrument so that you can see the tonsils well. Take hold of the affected one firmly with a bronzed iron hook and incise it with a properly sharpened instrument. Leave the coverings [the pillars of the fauces] which stand next to them uninjured however."

He even anticipated the much debated present operation of complete enucleation when he says, "et a radice funditus evellantur"—plucked away entirely by the roots.

Of an elongated uvula which could not be made to contract as the result of local medication he wrote:

"It should be grasped with a forceps made for the purpose near the palate where the uvula itself is sometimes of smaller diameter and snipped off. Care should, however, be taken not to touch the root of the uvula."

His method of treating "scinancia," literally translated retro-pharyngeal abscess, would hardly, however, appeal to the modern laryngologist:

"Take o salt beef half cooked of the size and shape of a chestnut or a filbert, and having fastened it firmly by a long silken cord have the patient swallow it, and then let the physician pull it out suddenly and violently [cum violentia] in order that the abscess may be ruptured."

In 1252 Bruno of Longoburgo published his *Chirurgia Magna*, in which he describes several varieties of nasal polypi, one of them of dark colour, slight sensibility, and hard, which he regarded as malignant and advised leaving alone. He suggests that the root of the simple polyp be cauterized with a hot iron or with some cauterizing material. He seems to have anticipated Meyer's discovery of adenoids, and quotes Paul of Aegina's method of dealing with post-nasal growths—namely, that a ligature with knots at intervals be passed through a tube into the nose and brought out again through the mouth and a to-and-fro motion be used to cut off the projecting growths at the back of the nose. The originator of the term "union by first intention" ("unio per primam intentionem"), he realized that wounds should heal without pus formation, and regarded purulency as the fault of the surgeon.

Theodoric, a pioneer in plastic surgery, used strong wine as the only dressing. A bishop as well as a surgeon, he was the first writer definitely to mention anaesthetics for throat and other operations, assigning their introduction to his father, Hugh of Lucca:

"Having made a mixture of the wine extracts of opium, hemlock, mandragora, unripe mulberries, and wild lettuce a sponge should be boiled in this fluid until all is boiled away, and then whenever anaesthesia is wanted this sponge should be placed in warm water for an hour and applied to the nostrils until the patient sleeps, when the surgical operation should be performed. At its end another sponge dipped in vinegar should be frequently applied to the nostrils or some of the juice of the root of hay should be injected into the nostrils, when the patient will soon awaken."

In the Middle Ages, as now, the treatment of catarrh and coryza was the subject of much speculation, of many remedies, and of much disappointment. Gregory Horst, a prolific writer about 1660, highly extolled the medicinal properties of tobacco. He declared that the inhabitants of Florida at certain specified seasons of the year live on the smoke of this plant, which they receive into the mouth through horns prepared for the purpose, whereby, they assert, hunger and thirst are stilled and an incredible amount of phlegmatic humours are collected in the mouth.

When it (the smoke) is taken into the mouth through a pipe stem it pervades the whole brain and in the same manner is borne into the ears and even the uterus. One of the signs of its efficacy is the paleness of the countenance.

Fabricius ab Aquapendente (1537–1619) in *Opera Chirurgica*, after criticizing the treatment of ozaena as advocated by Celsus, writes as follows (edition of 1723, cap. xxvi):

"An iron cannula is to be inserted in the Nostril so long that it will reach the end and equal the length of the ulceration and occupy the cavity of the Nostrils: through this a glowing hot instrument is to be introduced which however should not reach beyond the cannula, it should be so done that the hot iron heats the tube and through this the nasal tissues and the ozaena. It is not intended that the Nose should suffer from this heat but only that the ulcerated part should be heated to a point short of pain in one having a good tolerance. This being perceived the cannula may be taken out of the nostrils the secretions cleaned off and then replaced."

He also regarded tonsillotomy as performed by Celsus and Paulus Aegineta as neither safe nor easy. He advises seizing the tonsil with a long slender forceps to draw it out, so that by skilfully making traction the tonsil as if of its own accord will follow.

The operation of tracheotomy, although described by Arabian, Greek, and pre-Renaissance writers, does not appear to have been actually performed until the middle of the sixteenth century. Its first performance has been ascribed to Benivoni, who died in 1502, but according to Casserius (1600) it was Brasavola who first opened the trachea (in 1545), his dictum being: "When there is no other possibility in angina of admitting air to the heart we must incise the larynx below the abscess" (Holmes). Casserius remarks that those who rejected bronchotomy are "inhuman, awkward, timorous, and are even, as it were, to be held as homicides." Fabricius says:

"Of all the surgical operations which are performed on man for the preservation of his life by the physician I have always judged to be foremost that by which man is recalled from a quick death to a sudden repossession of life, a feat which raises the surgeon nearest to the level of Aesculapius—that operation is the opening of the aspera arteria by which patients from a condition of almost suffocating obstruction to inspiration suddenly regain consciousness and draw into their heart and lungs that vital ether, the air, so necessary to life and again resume an existence which had been all but annihilated."

He regards the operation as serious. To escape the criticism of perhaps having hastened death, and "because from the operation no small emolument may be derived," he advises that the patient's friends should be told of the desperate nature of the case.

A longitudinal mark was to be made with ink down the middle line of the neck and a cross mark at the point of the tracheal incision, scarcely the breadth of a thumb below the lower border of the larynx.

Desault was the first to perform the operation of laryngotomy—or, as we would now call it, laryngo-fissure—by splitting the thyroid cartilage in an individual in whom a foreign body had become impacted in the larynx. In 1788 Pellatan recorded a case[1] in which he had performed laryngotomy for the removal of a foreign body lodged in the upper orifice of the oesophagus.

That intralaryngeal growths were diagnosed and even removed in pre-laryngoscopic days must appeal to us to-day as truly a remarkable feat, yet early in the seventeenth century we find Marcellus Donatus[2] referring to laryngeal growths, which he describes as warts in the throat. In 1817 Cheesman of New York published the record of a case of papilloma of the vocal cords dying without relief.[3] In 1837 Trousseau and Belloc could only report from literature and from their own experience 7 cases. Ehrmann, in 1850,[4] recorded 31 cases of laryngeal growths, including 2 cases of his own. Horace Green in 1852[5] records the removal of a laryngeal polyp from a child of 11, which he could see by forcibly depressing the tongue—thus anticipating Kirstein's autoscopy of the larynx.

Middledorpf[6] in 1853 removed a polyp, springing apparently from the upper part of the larynx, by means of an incandescent platinum wire loop, and cited 64 cases of laryngeal polypi previous to his own case.

To the student of laryngology the various steps leading up to the discovery of the modern laryngoscope are full of interest. In 1807 Bozzini invented a double cannula with a mirror placed at such an angle that the image of the part seen through one compartment was reflected back to the observer's eye through the other compartment, the source of illumination being a wax candle with a reflector behind.

Cagniard de la Tour in 1825, and Senn in 1827, made attempts with a double series of mirrors to practise autoscopy of the larynx.

In 1829 Benj. Babington presented to the Hunterian Society[7] an oblong piece of glass set in silver wire with a long shank. The reflecting portion of the mirror was to be held against the palate while the tongue was held down by a spatula.

Liston, in 1837, taught that a view of the larynx could often be had by introducing such a glass as is used by dentists well back into the fauces and keeping the reflecting surface, previously warmed by dipping in hot water, turned downwards.[8]

In 1838 Baumès exhibited at the Medical Society of Lyons a mirror the size of a two-franc piece, which he found useful in examining the post-nasal space and the larynx.

Avery, in 1844, was the first to employ a reflecting forehead mirror with lamp attached, employing a speculum similar to Bozzini's, except that it possessed only one compartment

By general consent, however, Manuel Garcia is considered the real father of laryngoscopy. In his original communication read before the Royal Society of London[9] emphasizing the practical importance of studying the interior of the voice box, the following sentences occur:

"The pages which follow are intended to describe some observations made in the interior of the larynx during the act of singing. The method which I have adopted is very simple. It consists in placing a little mirror fixed on a long handle suitably bent in the throat of the person experimented on against the soft palate and uvula. The party ought to turn himself towards the sun so that the luminous rays falling on the little mirror may be reflected in the larynx. If the observer experiment upon himself he ought by means of a second mirror to receive the rays of the sun and direct them on the mirror which is placed against the uvula."

Many years later, speaking before the Subsection of Laryngology at the Seventh International Congress in London in 1881, he thus describes his epoch-making discovery:

"One September day in 1852 I was strolling in the Palais Royal preoccupied with the ever-recurring wish so often repressed as unreasonable when suddenly I saw the two mirrors of the laryngoscope in their respective positions as if actually present before my eyes. I went straight to Charrière the surgical instrument maker and asking if he happened to possess a small mirror with a long handle was informed that he had a dentist's mirror which had been one of the failures of the London Exhibition of 1851. I bought it for six francs. Having obtained also a hand-mirror I returned home at once impatient to begin my experiments. I placed against the uvula the little mirror (which I had heated in warm water and carefully dried) then flashing upon its surface with a hand-mirror a ray of sunlight I saw at once to my great joy the glottis wide open before me and so fully exposed that I could perceive a portion of the trachea. When my excitement had somewhat subsided I began to examine what was passing before my eyes. The manner in which the glottis silently opened and shut and moved in the act of phonation filled me with wonder."[10]

This historical and original pronouncement of Garcia's (for there is no reason to suppose that he was aware of any previous experiments) immediately attracted attention and opposition—not, however, the attention its importance demanded, nor the opposition worthy of an enlightened profession. Thus no less distinguished a scientist than Professor Merkel of Leipzig, writing in the *Anthropophonik*, 1857, p. 608, says:

"I have not, it is true, been able to obtain Garcia's original observations, and do not know therefore how he proceeded in these alleged experiments, what he has seen and what he has not seen, but I have just grounds to doubt the reality of his observations until I am informed in what manner Garcia has prevented the mirror from becoming dimmed and how he draws forward the epiglottis, which to a great extent hides the glottis from the eye."

As Dean Swift very truly, however, observes: "When a true genius appears in the world you may know him by this sign—that all the asses are in confederacy against him."

Ludwig Türck in 1857, unaware of Garcia's observations, was working in Vienna with a small mirror investigating diseases of the larynx,[11] but he was anticipated in publication by Czermack, in a paper which appeared in the *Wiener medizinische Wochenschrift* in March, 1858, entitled "Uber den Kehlkopfspiegel." In this paper a large perforated concave mirror was recommended for reflecting either sunlight or artificial light, which in the same year Semeleder adapted to a spectacle frame.

Both Czermack and Türck published books upon diseases of the throat in 1859 and 1860, the publications appearing in French, as both authors had journeyed to Paris—Türck to persuade the savants of the Académie de Médecine that he was the pioneer, Czermack to persuade them that Türck was an impostor, so hot and furious had the contest for priority become.

In 1863 Tobold published in Berlin his *Anleitung zur Laryngoscopie*, and in the same year Louis Elsberg his paper on the laryngoscope and laryngoscopic technique.

To our own countryman, the late Sir Morell Mackenzie, belongs much of the credit of familiarizing the profession with the importance of the laryngoscope, both as a means of accurately diagnosing disease and as a practical aid to treatment. In 1859 he visited Czermack in Vienna, and was present during the acrimonious and none too dignified controversy between Czermack and Türck on the question of priority; in 1863 he was awarded the Jacksonian prize of the Royal College of Surgeons for his essay on "The Pathology and Treatment of Laryngeal Disease." In 1880 Morell Mackenzie published his monumental work, *Diseases of the Throat and Nose*, a book renowned throughout the world for its erudition, its extraordinary accuracy, and its breadth of knowledge.

The first intralaryngeal operation by the indirect method under the guidance of the laryngeal mirror was performed by Lewin on July 20th, 1860; the second in November, 1861. In a communication to the *Allgemeine medizinische Central Zeitung*, October 12th, 1861, he remarks that intralaryngeal growths are present in from 5 to 6 per cent. of all laryngeal cases, and describes 7 cases he had operated upon himself—3 by cutting operations, 4 by the application of caustics. He therefore anticipated Von Bruns, who, however, as a rule gets the credit, but whose first case was not published until 1862 ("Die erste ausrottung eines Polypen in den Kehlkopfhöhle," Tübingen, 1862).

In 1866 Elsberg published the first description of the microscopic appearances of laryngeal papillomata.

In 1867 J. Solis Cohen[12] reported the intralaryngeal removal of a laryngeal polyp. So rapid were the strides in laryngological practice that in 1871 Morell Mackenzie published the records of 100 cases in his paper "On Growths in the Larynx," for the first time classifying them as papillomata, fibromata, fibro-cellular or mucous polypi, myxomata, spindle-celled sarcomata, cystic tumours, adenomata, and angeiomata.

To our American confrères, past and present, much credit is due, not only for pioneer work, but also for the persistent way they have kept the laryngological flag flying.

In 1817 Dr. Cheesman of New York published a book upon *Growths and Tumours of the Throat*, followed a few years later by Horace Green's work upon the direct treatment of affections of the larynx and trachea, a work which, however, met with furious opposition and almost ridicule. Much the same kind of opposition was also meted out to Dr. O'Dwyer when he introduced his method of intubating the larynx.

The first laryngoscope imported into America was received from Vienna by Dr. Krackowizer in 1858. In 1871 Dr. Elsberg established the first clinic in America devoted exclusively to diseases of the nose and throat, and in 1873 the first laryngological society ever established was started in New York. This society, the New York Laryngological Society, was, however, gradually dissolved, and was incorporated as a section of the Academy of Medicine in 1885.

In 1878 the American Laryngological Association was established; its first meeting was held in 1879 in Buffalo, under the presidency of Dr. Louis Elsberg.

Papers dealing with laryngological subjects were first published in general medical journals and then in otological journals, more especially in the *Archiv für Ohrenheilkunde*, founded in 1864 in Vienna, and in the *Monatschrift für Ohrenheilkunde*, founded by Voltolini in Berlin in 1866.

In 1874 the *Annales des maladies de l'oreille et du larynx* were published, and in 1880 the *American Archives of Laryngology*. In 1881 the *Archivi Italiani* appeared, and in 1884 Semon's *Centralblatt für Laryngologie*. In 1887 the Spanish journal, the *Revista de Laryngologia*, and in England the *Journal of Laryngology*, edited in the first instance by the late Sir Morell Mackenzie and the late Norris Wolfenden, appeared almost simultaneously. In 1890 the first number of the *Laryngoscope* saw the light of day, and in 1893 the first volume of *Fraenkel's Archives*, truly a "magnum opus."

The driving force behind laryngology was rewarded in 1895 by Kirstein's discovery of autoscopy of the air passages,[13] which paved the way to the more elaborate and ingenious methods of Killian and Chevalier Jackson, by means of which with suitably illuminated rigid tubes practically the whole of the respiratory tree can now be brought under inspection, either by direct endoscopy or by suspension laryngoscopy.

Closely allied with laryngology, not only on historical but also on practical grounds, is the art of oesophagoscopy, which followed very shortly after the discovery of the laryngoscope.

Waldenburg was the first to succeed in introducing a short tubular mirror 14 cm. long into the mouth of the oesophagus. To this instrument Störk added a lobster-tail articulation to facilitate introduction. Following this he introduced long rigid tubes, and thus succeeded in realizing the art of direct oesophagoscopy. In the early eighties Morell Mackenzie, and after him Lowe, used a skeleton oesophagoscope with indirect illumination, but without much practical result.

The Leiter-Nietze oesophagoscope, with an internal lamp and system of prisms, followed the indirect method.

Kussmaul in 1868 described the successful examination of the normal and diseased oesophagus, using Desmoreaux's apparatus for illumination. These experiments were continued

by Müller, and yielded the practical result that a rigid tube 13 mm. in thickness may be introduced into the oesophagus of all normally constituted persons. Von Mikulicz deserves the credit of really laying oesophagoscopy upon sure foundations, the problem of illumination having been advanced by Leiter, Casper, Brünings, Kirstein, and Guisez.

That laryngology has played and is playing an important part in relation to general medicine must, I think, be obvious to any serious student of the subject. Just as a knowledge of ophthalmology is of inestimable service in interpreting the many problems associated with the diagnosis of local diseases of the eye and with unravelling the intricacies of certain affections of the central nervous system and other systemic diseases, so also is a knowledge of the clinical appearances of the interior of the larynx as revealed by laryngoscopy of equal value in the interpretation of many pathological lesions, both local and general.

To be able to bring under actual ocular inspection the commencing stages of such diseases as tuberculosis of the upper air passages, the various types of intralaryngeal paralysis originating as the result of morbid affections of the central and peripheral nervous systems, both organic and inorganic, the stenosis due to mediastinal growths, to enlargement of the lobe of the thyroid gland, or to aneurysmal dilatation of the aorta, is surely knowledge worth having.

The physician who to-day is unable to use his laryngoscope and to interpret the clinical pictures brought under his very eye is like the captain of a ship without his chart. True, he may bring his vessel into port, but how much better his chances of doing so would be were the rocks and the quicksands charted in his mind's eye. How often even to-day are the early stages of intrinsic malignant disease of the larynx missed either from a totally inadequate examination, or, what is perhaps as frequent, from no examination at all, and at a time when, literally speaking, cancer of the larynx may be regarded as a curable affection! In the light of our present knowledge the responsibility of the physician or surgeon who looks on, without looking in, at a case of persistent hoarseness is great—is, in fact, criminal. No man of any intelligence can to-day with any justice, considering the enormous strides of human knowledge, decry specialism in any walk of life. The very progress of the art of medicine, in the broadest sense of the term, is due to the fact that the great pioneers of the past have been men who have realized that it is better to thoroughly grasp a knowledge of one part of the human frame than to dabble with its entirety. Critics are fond of saying that the surgeon-specialist is prone to overestimate the value of local treatment, to ignore those general constitutional causes which underlie disease, and to look at pathological processes merely through the mirror of his own speciality, oblivious that the fault is often with the generalist who, neglecting or ignoring the local origin of disease, quite ineffectively treats the patient by drugs for a something which might easily have been recognized and treated successfully had he possessed the knowledge and the necessary *tactus eruditus*.

Work of much scientific and clinical value has been done by the combined efforts of physicians, surgeons, and laryngologists, as will be seen by a study of the innervation of the larynx and of laryngeal paralysis. In 1890 Semon, in association with Horsley, pointed out the greater proclivity of the abductor fibrils of the vocal cords to paralysis—a fact confirmed by the experimental researches of Onodi and Risien Russell in animals, thus establishing what is now known as "Semon's law." In central and peripheral lesions of the motor laryngeal nerves the abductors only suffer, or at least do so earlier and to a greater extent than the adductors, with the important corollary that laryngeal paralysis which involves the abductors (sometimes in association with the adductors) is due to organic disease, while motor paresis of the adductors is in the great majority of cases functional. With the late Sir Henry Butlin he revived the operation of thyrotomy, now generally called laryngo-fissure, for the removal of intrinsic malignant disease of the larynx—an operation which had fallen into disrepute owing to a former unfortunate selection of cases for its performance, to-day an operation which in skilful hands gives as good, if not even better, results than operations for malignancy in almost any other region of the human body. To cite but one more instance, consider the enormous strides made by the laryngologist in the local treatment of that most painful and distressing of all laryngeal ailments—laryngeal tuberculosis—by the institution of the silence cure, galvano-caustic puncture of foci of tuberculous oedema, and the curetting of laryngeal ulcerations.

Does laryngology occupy the position in the medical curriculum which its importance and its utility demand? I say without hesitation that it does not, and that until it is made a subject of compulsory study it never will. To burden the already overburdened medical student with yet another compulsory class appears almost criminal; yet, on the other hand, it is the business of the university or the teaching school to turn out its alumni equipped and in full harness.

It is difficult to persuade the student that a course of study which is not compulsory is of real importance to him in after-life. When we realize, however, how the State is investing public bodies under its control with ever-increasing powers in relation to the treatment of ear, nose, and throat diseases, in school clinics, welfare departments, and tuberculosis centres; when we realize what a large number of children owe their physical defects and backward development to the presence of diseases of the throat and ear; and when we also realize how much can be done to relieve them of their disabilities, it is the duty of those in charge of these special clinics to urge and to continue to urge upon the powers that be the necessity of insisting that every student shall have before he quits the portals of his university at least a reasonable theoretical and practical knowledge of laryngology and otology.

The Scottish universities, ever to the fore in educational facilities, now make the study of laryngology and otology compulsory. Each student has to attend the throat and ear department of his hospital for one term, to receive both systematic and clinical instruction. Examination is not demanded in Glasgow, but is compulsory in the other three universities, while in Edinburgh the student has to obtain 50 per cent. in this special examination before he is admitted to his final professional.

The time has surely come when, in the interests of the general public, the English universities and qualifying bodies should do likewise. Much encouragement to the study of laryngology and otology would also be afforded were there more clinical appointments in the special departments of our general hospitals, and were facilities made to hold such appointments for considerably longer periods than is possible at present; also were some special degree in laryngology and otology instituted to signalize the fact that its possessor had had a thoroughly good training in the special department which was to be his life's work.

With this end in view the Council of the Laryngological Section of the Royal Society of Medicine has recently appointed a committee, of which I have the honour to be a member, to draw up a memorandum to be presented to the Royal Colleges of Physicians and Surgeons, in which memorandum there are *inter alia* the following recommendations:

1. That attendance at the hospital throat and ear clinic be compulsory.
2. That no student be allowed to proceed to his final examination unless he can produce documentary evidence that he has attended (and has been signed up) a practical course upon diseases of the throat, nose, and ear.
3. That the qualifying examination in the diagnosis and treatment of the more common diseases of the throat, nose, and ear, and in the use of the more ordinary instruments, be both practical and oral.
4. That the examination be conducted by recognized laryngologists and otologists.

I would fain see the status of the teacher of laryngology be that of a professor and not of a lecturer.

The question of emolument attached to a professorship does not need to enter the scheme at all—it is the status that is wanted, the recognition and accentuation of the importance of the subject.

The ever-widening path of human progress demands that these changes should come. As the great surgeon-orator, the late Sir James Paget, in speaking of the future of pathology, said, "Where, then, are we to stop? I do not know more than this, that we must not stop where we are; we must go on and on, and we may be sure that they who work to find the truth will not work in vain, sure that with true work true good will come."

That these changes, these steps to the realization of a higher standard of efficiency in the medical profession, will come I feel sure; that they may come quickly is my earnest desire, confident as I am that our path of duty lies just as much in the prevention as in the cure of disease, in the early recognition and successful handling of the many ailments which threaten our sense organs—organs very responsive to intelligent treatment, but which,

when damaged, seriously hamper individual activity and utility, and collectively tend to undermine our national vigour, prosperity, and well-being.

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THE NATURE AND SIGNIFICANCE OF HEART SYMPTOMS.

BY

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II. THE REFLEX PROCESS AND THE HEART BEAT.

As disease is only recognized by the symptoms it produces, a knowledge of symptoms is a necessary preliminary to an intelligent investigation of disease. This knowledge of symptoms is necessary not only to the diagnosis of a patient's complaint but for a prognosis and a rational treatment. The symptoms of disease even in one sick individual may be numerous and varied, so that it is impossible to study every symptom with that care and insight which are necessary for understanding its use in the practice of medicine. The search for symptoms by new methods leads to the discovery of many, but the result is often but to add to the mass of details which obscure the problems of disease, and some other method of investigation is urgently needed.

Phenomena in nature, however numerous and varied, are subject to definite laws. Progress in every branch of knowledge which deals with these phenomena is hampered until these laws are discovered. The symptoms of disease are natural phenomena, and the vital processes concerned in their production are certain to be few in number, and the nature of symptoms will not be understood until these vital processes are discovered.

Recognizing that a knowledge of symptoms was the first step in the investigation of disease, the staff of the St. Andrews Institute for Clinical Research began their work by a search for the laws governing the production of symptoms.

In the course of this inquiry it was found that a great mass of symptoms were produced by disturbance of a single vital process—that which includes what is known as reflexes. The term "reflex" had been restricted to a few manifestations of a vital process, so that its affinity to other manifestations had not been recognized.

Though reflexes had received much attention, yet the manner in which they were modified by disease had received little attention. We therefore have devoted a good deal of study to the process as it concerns different organs, and in this article I deal with the light which the recognition of this process has thrown upon the mechanism of the heart beat.

The Nature of the Reflex Process.

We tried to look at the reflex acts from the point of view of the vital process. We analysed the parts concerned in a reflex arc. The arc consists of cells that are capable of stimulation connected in some way with cells that are capable of producing an effect. In some instances we can recognize the stimulus and the cells stimulated, but as a rule we can only recognize the effect. In the vast majority of reflexes we can only infer or guess at the nature of the stimulus, while of the manner of conduction from the cells stimulated (receptor cells) to the cells activated (effector cells) we have only the vaguest notion.

The parts concerned in a reflex act are the stimulus, the cells receiving the stimulus, the cells concerned in the conduction of the stimulus, and the cells which respond and produce an effect.

It will be seen that this process includes a great variety of responses or manifestations widely different in character and appearance, as contraction of muscle, secretion of glands, sensations, etc. For this complicated process we required a term, and we attempted to get one which would be comprehensive, but on consideration we found that no term could convey so much of the process as the term "reflex." To avoid confusion we tried to give a clear description of what was meant by the term. The meaning we attach to the term "reflex" is *that vital process by which a stimulus passes from one tissue or organ to another, resulting in a response.* The nature of the response depends on the function of the organ stimulated.

In this definition of the reflex process the manner in which the stimulus is conveyed from the receptor cells to the effector cells is not mentioned. Hitherto it has been assumed to be by nerves, but nerves are not necessary to the process, for other tissues may convey the stimulus, as will be realized when the evolution of the nervous system and the movements of the heart are described.

The Origin and Evolution of the Reflex Process.

The test of a new conception is the light that it throws upon obscure problems. The application of the theory of disturbed reflexes led to an examination of the mechanism of the heart beat—a mechanism which depends upon this vital process which we call reflex, and it fulfils the test of a true conception, as it presents the whole subject of the heart beat and its disorders in a new and better light. It also provides an interpretation of many facts which had either been misunderstood or overlooked, and gives a guide in which direction to look for other facts.

The nature of the process we call a reflex can be gathered by the description given in Bayliss's *Principles of General Physiology* of the evolution of the nervous system. This system begins in the conduction of a stimulus in the lowest multicellular organisms, where the communication passes from cell to cell without any intermediate mechanism. The next stage may be seen in the sea anemone, where projections of the cutaneous cell are connected with muscle fibres. The next stage may be considered to be that when a nerve cell is interposed the stimulus arising in one cell (the receptor or A part of the reflex) passes to a nerve cell (the centre or B part of the reflex) which is connected with the organ which gives the response (the effector or C part of the reflex). This stage, simple at first, as in the earthworm, becomes extremely complicated, especially in the central or B part of the reflex, which is situated in the central nervous system, where the stimuli are rearranged and guided into the paths for the production of their effects. The portion of the reflex in the central nervous system is that generally spoken of as "centres"—as the centre for vomiting, for respiration, for micturition, etc.

It will be seen that this description of the evolution of one part of the nervous system deals with the passage of a stimulus from one tissue to another, corresponding with our conception of a reflex.

The Reflex Process and the Movements of the Heart.

In the different rhythms of the heart we find variations in the reflex process, corresponding in a curious manner with Bayliss's description of the evolution of the nervous system. In certain abnormal conditions the muscle cells of the auricle and ventricle may contract independently of the control of the normal mechanism. The contraction of one cell stimulates its neighbour to contraction, and hence we get that remarkable condition called fibrillation. In this condition the muscle wall, though as a whole it stands still, is seen to be in continuous movement on account of the inharmonious contractions of the individual muscle cells. No sooner does one cell contract than it is again stimulated to contraction by its neighbour—that is to say, the stimulus evoked by one cell passes directly to another, in the manner described as the first stage in the evolution of the nervous system.

The stimulus for contraction of the ventricle passes from the auricle to the ventricle along the auriculo-ventricular bundle. (See Fig. A.) If this be cut or a portion destroyed by disease the ventricle no longer responds to the stimulus from the auricle. The ventricle, however, does contract at a slower and different rate from the auricle. There is good reason for assuming that the stimulus arises in the remains of the bundle and passes to the ventricle by the Purkinje cells. Thus we have an illustration of the reflex process where the stimulus arises in the Purkinje cells and is conveyed by them to the effector organ—that is, to the muscle cells of the ventricle.

The process is similar, though a little more complex, when the stimulus arises in the auriculo-ventricular node or in the auricle. The stimulus for contraction arises normally in the

sino-auricular node, passes directly to the auricle, causing it to contract, is taken up by the cells of the auriculo ventricular node, which reproduce the stimulus and send it by the bundle to the ventricle, thus giving rise to that regular sequence of auricular and ventricular contractions which facilitates the work of the heart.

It is to be observed that in this description of the conduction of the stimulus the stimulus is not conveyed by nerve fibres but by the Purkinje cells, the stimulus passing from cell to cell. Comparisons have been made of the rate of conduction along nerve fibres with that along the auriculo-ventricular bundle, but the conditions are not comparable because the nerve fibre is a continuation of one cell, while in the bundle the stimulus passes through a great number of cells. Above the sino-auricular node, and modifying its activities, are the vagus and sympathetic nerves. It is through these that the heart's action is reflexly affected by agents outside the heart. We thus see that the heart's rate and rhythm, both normal and abnormal, are governed by variations of the same vital process. How the recognition of this fact leads to a fuller understanding of the variation of the heart beat and the factors engaged in modifying it will be seen in the account which follows.

The Practical Application of the Reflex View of the Mechanism of the Heart Beat.

This description of the mechanism of the heart beat may appear to be of the nature of an academic disquisition and of little practical value. On the contrary, this appreciation of the factors concerned is essential to the understanding of the signs and symptoms of disease and of the action of remedies. Indeed, the reason of the backward state of cardiology and of our knowledge of the action of remedies is due to the failure to grasp the principles involved in this aspect of the subject.

In the last article it was shown that there were two kinds of tissue concerned in the movements of the heart: (1) that concerned in the production and the conduction of the stimulus which regulates the contraction of the chambers (the conducting, or, as we may also call it, the reflex system—Fig. A); (2) that concerned in the contraction of the chamber—the muscle cells of auricles and ventricles (the contracting system).

These two systems are quite distinct in function, and the manifestations in health and disease of the one system are quite distinct from the other, and the kinds of information yielded by the symptoms of the two systems are also quite distinct.

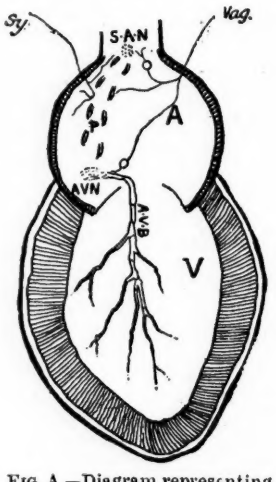

FIG. A.—Diagram representing the two main systems concerned in the heart beat. (1) The conducting system, represented by the sino-auricular node (S.A.N.) and the auriculo-ventricular node (A.V.N.) and bundle (A.V.B.). In both auricles and ventricles are also Purkinje fibres which belong to this system, represented by the scattered cells (P) in the auricle. The vagus (*vag.*) and sympathetic (*sy.*) also belong to this system. (2) The contracting system, represented by the muscle cells of the auricle (A) and ventricle (V).

The conducting system, with the sympathetic and vagus nerves, is concerned with the regulation of the rate and rhythm of the heart's contraction. The agents of disease readily affect some parts of this system, and in consequence we get the symptoms which are peculiar to this system—that is, variations in the rate and rhythm.

The contracting system, on the other hand, is concerned with the output of blood from the heart—that is, with maintaining the functional efficiency of the heart. When the heart begins to fail—that is to say, when its functional efficiency becomes impaired—the symptoms belong to quite a different category from that of the conducting system.

If this distinction is kept in mind it will be realized that attempts to find out the functional efficiency of the heart by observing the variations in the rate and rhythm of the heart are bound to fail, for the simple reason that information of a kind is sought from a source that cannot yield it.

The introduction of auscultation was followed by long and careful research to find out the cause of murmurs. The excellent results were vitiated by the failure to recognize the kind of information which had been obtained. It was thought that the functional efficiency of the heart could be ascertained from the modified sounds of the heart. To-day we find the modified sounds used as a guide in treatment and prognosis—a kind of knowledge they are incapable of supplying.

The interpretation of variations in the rate and rhythm of the heart has been misapplied in the same way, for the kind of knowledge they reveal has not been understood. That the functional efficiency of the heart depends on the integrity of the heart muscle is such a commonplace that it seems unnecessary to mention it; but we find that the information of functional inefficiency or heart failure is sought for in signs which have nothing to do with the functional efficiency of the heart muscle, while the signs peculiar to the inefficiency of the heart muscle are overlooked.

It is true that certain murmurs may indicate valves so damaged that they impede the work of the heart muscle. But it must be realized that they only oppose a hindrance to the contracting system, and it is the exhaustion of the contracting system that produces the symptoms of heart failure—that is to say, while heart murmurs may indicate conditions that may lead to heart failure, they do not of themselves give the signs of heart failure. In the same way the conducting or reflex system may occasionally give certain signs which we associate with heart failure, or which may lead to heart failure (as an excessive increased or diminished frequency), but these are not the signs of heart failure.

The variations of rate in response to effort, which are so often taken as evidences of functional efficiency, are thus seen to be due merely to a susceptibility to stimulation of some part of the conducting or reflex system which may have nothing to do with the heart's state of efficiency. Thus as the signs of damaged valves give one kind of evidence, so does the manifestation produced by the conducting or reflex system give another kind, and the signs of the contracting system give information distinct from the other two.

The Kind of Information Yielded by Disturbance of Rate and Rhythm (the Reflex or Conducting System of the Heart).

The phenomena produced by disturbance of the reflex system of the heart can best be described by recognizing two different kinds of mechanism which regulate the heart beat—(1) when the rhythm starts at the sino-auricular node (the normal rhythm), and (2) when the heart's contraction starts at some other place in the heart (abnormal rhythm). I propose to deal very briefly with the evidences, merely showing how the recognition of the disturbances throws light of a valuable kind on diseased states and on the effects of remedies. The knowledge acquired so far is limited, but such as it is it shows the lines on which more valuable knowledge can be acquired.

The normal heart beat starts at the sino-auricular node, where the stimulus for contraction is produced. The stimulus passes to the auricle and ventricle in the manner already described. It will thus be seen that in the normal heart beat the variations in rate and rhythm of the pulse are entirely dependent on the sino-auricular node. The cells of the sino-auricular node, after the discharge of a stimulus, are exhausted and remain quiescent for a short period, during which they recover from the exhaustion. As this period of recovery lengthens they become more and more susceptible to stimulation, until they again discharge their stimulus. What it is that excites them to "go off" is not quite clear, but certain agents have the power of increasing or diminishing their susceptibility—as heat, which causes an increase in the rate, or cold, which causes a decrease. It is possible also that agents circulating in the blood may affect the cells in a similar fashion; certain agents like alcohol seem to increase their sensibility, while others like digitalis may decrease it. In like manner the agents of disease may act, by the increase in temperature or by the toxic products.

The sino-auricular node has inherently a pace which is modified by certain circumstances. It is under the domination of the nervous system by means of the vagus and sympathetic nerves. The vagus maintains such a control over the sino-auricular node in health that it is never free from its inhibitory influence. A relaxation of vagal activity is followed by an increased rate of the pulse. The sympathetic acts in the opposite manner to the vagus, and an increase in its activity leads to an increase in the rate of the

heart. Here is where the great difficulty in interpreting variations of rate comes in. The sino-auricular node without vagus influence would cause an increase in the heart's rate. When, then, we find an increase in rate, we have to ask whether it is due to the sino-auricular node being freed from vagal activity, or to an increase of the sympathetic influence, or to a direct effect of some agent (temperature, toxins, drugs) on the sino-auricular node itself. These are the types of questions that require settling before we can understand the action of remedies or the symptoms of disease.

We know already a little, but that little indicates that there is much more to be known. We know, for instance, that the increased heart rate that follows the administration of atropine is due to a suspension of vagal activity, and that the increase in rate is different from that which follows a rise of temperature or effort, or the administration of alcohol. It is also known that digitalis may have a definite effect on the vagus, stimulating it and so restraining the activity of the sino-auricular node.

Varied as are the effects of drugs diseased states have effects as distinctive, for agents of disease affect the reflex system in diverse places and diverse ways, and it is by the recognition of these diverse modifications that the different diseased states can be recognized. We know that the reaction is different in pneumonia from that in typhoid fever, and these again from that in rheumatic fever. During some infections the conducting system may be affected, as shown by the temporary presence of partial heart-block.

But there is more than that, for the agent of disease modifies or counteracts the action of drugs. Thus, though in the normal heart atropine increases the rate, yet in certain diseased states it may slow the heart's rate. In some forms of disease digitalis will slow the heart rate, in other diseased states it is without effect. The recognition of these facts explains the reason of the confusion which reigns in the therapeutic field. A great deal of work has been done in testing the action of drugs on the healthy heart, but it has not been realized that the diseased condition modifies the effects of the drug. When it is realized that it is chiefly on some part of the reflex process that most drugs act the importance of a better understanding of this process will become apparent, all the more so when it is further realized that it is also by the modification of some parts of this process that many symptoms of disease arise. If these points are grasped it will be seen that in the sick man the agents of disease have affected the parts on which the drugs act, and therefore we can state as a principle which must be recognized in the investigation of the action of drugs that *the effect of a remedy is modified according to the nature of the disease.* It is the neglect of this principle which keeps therapeutics in the state of confusion in which they are at present.

Other reactions have to be considered. R. M. Wilson has lately drawn attention to a factor that has not been recognized—the secondary reaction to a stimulus. In a balanced reflex, when an act is regulated by two nerves acting the one in opposition to the other, the excitation of one is accompanied by the diminished action of the other. When the excitation ceases the nerve whose activity was diminished may greatly increase its activity. Thus a temporary slowing of the heart by stimulation of the vagus may be followed by a great increase in the rate of the heart by secondary reaction of the sympathetic (a reflex stimulation of the sympathetic by the vagus).

Abnormal Rhythms.

If the understanding of the reflex system is of importance with the normal rhythm, it is evident that with an abnormal rhythm it is of still greater importance. The various places where the heart beat may start are different in structure and in function from that of the normal starting place (the sino-auricular node), and in consequence the effects upon the ventricles are different. This was so fully dealt with in the previous article that I need not dwell upon it here, save to refer to the differences which follow effort in the cases, say, of the normal rhythm, auricular fibrillation, and heart-block, and to the difference of the effect of drugs like digitalis. Moreover, the fact that the stimulus which is produced by the cells of the contracting system—as in auricular fibrillation, flutter, and the idio-ventricular rhythm—is different from that which arises in the cells of the conducting system calls for a reconsideration of the mechanism of these abnormal rhythms and of their relation to the various agencies (effort, drugs, heat, toxins of disease) which act upon them.

SUMMARY.

1. The mechanism concerned in regulating the heart beat belongs to the vital process included under the term "reflex."
2. The cells taking part in this mechanism belong to two groups: an extrinsic, connected to the nervous system by the vagus and sympathetic nerves, and an intrinsic, which includes the sino-auricular and auriculo-ventricular nodes, and the Purkinje cells in the bundle and auricles and ventricles.
3. Agents of disease (toxins) which modify the rate and rhythm act on different parts of this mechanism, and certain disease agents produce characteristic effects.
4. Drugs that influence the rate and rhythm of the heart act in the same way, some of them also producing characteristic effects.
5. As toxins act on the same parts as drugs the effects of drugs will be modified by the effects of the toxins.
6. Before the effects of a remedy can be investigated it is necessary to know if the toxins have not already produced an effect which will interfere with the action of the remedy.
7. The kind of knowledge which disturbances of the reflex process reveals is limited to the variations in rate and rhythm, and they give no information regarding the functional efficiency of the heart.

THE PEPTIC ULCER.

WITH A REVIEW OF TWELVE MONTHS' SURGICAL TREATMENT (1921).

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To obtain control over any disease it is necessary to possess means which can be safely employed to eradicate it when established, and a knowledge of its etiology such as will enable us to prevent its occurrence or recurrence. Surgical experience has made a very substantial contribution towards the mastery of peptic ulcer. It has contrived means of dealing radically with ulcers which are safe, at least in practised hands and when employed with discrimination. In the course of arriving at its technique it has thrown a great deal of light on the conditions which determine peptic ulceration, and which, if undisturbed, will tend to its recurrence. I will argue later that with the assistance of radiology it has now actually reached an understanding of the immediate cause of ulcer, and has determined, although not exhaustively, the ulterior causes.

Among the contributions which radiology has made to medicine none is more brilliant than that which it has made to the diagnosis of gastric disorders. Without its assistance the diagnosis of ulcer uncomplicated by penetration or haemorrhage or stenosis was only a matter of suspicion. Now suspicion can be put to a test in which the margin of error is, in my experience, extremely small. I wish to express my gratitude to my colleagues, Dr. Oram and Dr. Mather, to whom I owe the reports on the cases which I propose to review.

Of these cases, 48 in number, on whom I operated in 1921, 41 were men, 7 women. In 34 instances the ulceration was gastric, in 8 duodenal, and in 6 jejunal. These figures do not include other simple disorders of the stomach, such as those which depend on adhesions or those due to pylorospasm without ulcer, but I wish to refer shortly to these two classes.

Adhesions Involving the Stomach.

One is impressed with the gross disturbance of function and the simulation of visceral disease which may be caused by such adhesions. I have opened the abdomen on four occasions during the year in cases of this kind, the patient in each case being incapable of following any occupation. In all four the adhesions were chiefly between the stomach and the anterior abdominal wall deep to an operation scar. According to the histories obtained the earlier operation had been as follows:

1. For gastric ulcer (evidence of operation on pylorus).
2. For perforated gastric ulcer (suture).
3. For gastric ulcer (gastro-enterostomy).
4. For perforated duodenal ulcer (suture).

Infection is the cause of such adhesions. When formed between the stomach and the abdominal wall they may cause

pain of severe intensity associated with the period of digestive movement, and pain is also characteristically complained of when exercise is taken. In dealing with them the omentum is of service; after separation the whole area concerned is covered by omentum fixed by sutures in whatever directions it may be desirable. The fourth case deserves special notice.

A man aged 46 on whom, at the age of 31, I operated for perforation of a duodenal ulcer. In 1918 I operated again and found an ulcer on the lesser curvature of the stomach; a posterior gastro-enterostomy was then done. In June, 1921, he was again admitted complaining of sharp stabbing pain in the left hypochondrium. I found the gastro-enterostomy opening in good order, the ulcer of the lesser curvature healed, and no ulceration elsewhere. The stomach was, however, attached to the anterior abdominal parietes, and also to the liver. These adhesions were dealt with as detailed above, and when I saw him six months later he told me that he had been free of all pain or discomfort.

Pyloric Spasm.

Cases of pyloric spasm and pyloric hypertrophy do not strictly belong to my subject. In four cases seen during the year ulcer was suspected either on the ground of clinical signs or of *x*-ray report, or of both. In all four a pyloric incision was made to demonstrate definitely whether ulcer was present or not. The operation was completed as a pyloroplasty. Relief of symptoms and increase of weight have followed in each case. Ulcer was simulated clinically in all four; in two the radiological diagnosis was also ulcer, in one the report said simply "marked delay," and in the fourth the stomach was reported normal in outline and function.

PEPTIC ULCER.

The forty-eight cases of peptic ulcer fall into six groups:

Group 1.—Perforated duodenal ulcer; two cases. Treated by infolding suture, gastro-jejunostomy, and pelvic drainage.

Group 2.—Ulcer of the lesser curvature, treated by ulcer excision alone or by excision and gastro-jejunostomy. This group includes three cases only. For reasons which will be discussed later ulcer excision alone is not a satisfactory operation.

The first case illustrates the disappointing result of this operation, an experience which has been recorded by other surgeons. It was adopted in this case with a view to shortening the operative procedure as much as possible, but other experience has shown me that it is never advisable on this ground and that there are better means of dealing with patients who are much reduced in strength by their disease. In this case, eight months later, I supplemented the ulcer excision by gastro-enterostomy. Gastric pain had persisted and vomiting was frequent. At this second operation, while no ulceration was found, the stomach was seen to be somewhat deformed at the site of the excision and this was apparently the cause of his symptoms. Since the supplementary operation he has done well.

In the second case of the group the ulcer was excised on account of repeated serious haemorrhage. A blood transfusion made operation possible; in the floor of the ulcer was a large vessel shewing a perforation temporarily plugged by clot.

In the third case the operation was chosen, as in the first, because the general condition of the patient did not seem to admit of gastrectomy. Excision was, however, supplemented by gastro-jejunostomy at the same time and from this combination better results are obtained than by excision alone.

Group 3.—Comprises ten cases treated by posterior gastro-enterostomy alone. In six instances the lesion was duodenal ulcer, in three gastric ulcer, in one pyloric stenosis.

Group 4.—Comprises two cases in which the operation was transgastric suture of the ulcer. In one case I had to deal with an ulcer near the cardia in a stomach which lay high up under the diaphragm. The stomach was small and the whole of it lay under the ribs, and the ulcer area was inaccessible except by gastrotomy.

The other case is somewhat remarkable in that both I and another surgeon opened his abdomen, the clinical and radiological diagnosis being ulcer, and found none. Six months after the operation, which I performed and in which adhesions appeared to be the cause of his symptoms, he was readmitted after a massive haemorrhage. I found an ulcer high on the lesser curvature, difficult of access, and also penetrating. It was sutured after gastrotomy.

The clinical result in these two cases has been satisfactory for the time being, but the proceeding is probably not radical enough for a permanent result. The condition of these two patients is, however, surprisingly good, as far as complaint is concerned.

Group 5.—Includes the cases, twenty-five in number, who were treated by partial gastrectomy. In three cases the operation was a "sleeve" resection. In the remainder the operation was what is most commonly described as the posterior Polya or Reichel operation—that is to say, resection of the stomach from the pylorus to beyond the ulcer-bearing area, closure of the duodenum, and anastomosis of the stomach wound to the jejunum through a mesocolic gap.

Group 6.—This group consists of six cases of jejunal ulcer. In these cases no one procedure is always suitable. The ideal procedure, as carried out in one case, is as follows: The pylorus was divided and the duodenum closed; the stoma was resected and the gastric and jejunal wounds left by this resection were closed. The pyloric half of the stomach was then resected and the stomach wound was anastomosed to a jejunal loop at a point about eighteen inches from the jejunal commencement, the anastomosis being retro-colic. The other procedures were:

(*a*) Two cases. Resection of the stoma; gastro-jejunostomy in Y.
(*b*) One case. Resection of stoma; end to-end anastomosis of jejunum.
(*c*) Two cases. Resection of stoma; gastric and jejunal wounds closed.

Simple resection of the stoma with closure of the stomach and jejunal wounds is obviously only suitable when no ulcer or stenosis exists elsewhere. If there is ulceration or stenosis in the stomach I think the operation is best completed by resection after the proceeding of Polya, or by a long loop gastro-jejunostomy. I do not like the Y gastro-jejunostomy; it is technically difficult after resection of the stoma, and has the worse fault of giving no safeguard against a reappearance of jejunal ulceration.

Among the forty-eight cases of the several groups there was no mortality, but two cases gave rise to some anxiety.

The first was a difficult case of partial gastrectomy for ulcer toward the cardiac end of the lesser curvature. A cigarette drain was used. On the sixth day there was a definite leakage of gastric secretion; jejunostomy was performed and mouth feeding stopped. The sinus closed in twenty-four days.

The second case was one of sleeve resection for mid-gastric stenosing ulcer. A fortnight after operation he showed abdominal distension which proceeded to complete obstruction on the eighteenth day. A volvulus of the ileum was found and released.

The necessity for operative treatment of peptic ulcer, apart from complication, arises from its resistance to other forms of remedy. The conditions of a peptic ulcer may be said to be three:

1. The ulcer involves the visceral wall alone; it is non-penetrating, non-stenosing.
2. The ulcer is penetrating.
3. The ulcer is stenosing.

Opinions do not differ as to the necessity for operation in the stenosing ulcer; few will expect a favourable result in penetrating ulcer without operation, but there is evidence that many non-penetrating ulcers will heal under general and local medical treatment. Up to the present it is not possible to base such treatment on an etiology that is demonstrated and acknowledged. That peptic digestion plays a definite part in the etiology is admitted, but pathologists are still searching for some antecedent condition rendering the gastric mucous membrane vulnerable to attack by the gastric juice. It is by no means certain that there is any such general antecedent lesion, or, in fact, that there are any causative factors other than an altered gastric secretion and an altered gastric rhythm. Any theory of the causation of this ulcer must explain its incidence in stomach, duodenum, and jejunum. The jejunal ulcer is illuminating. It shows that the normal jejunal wall submitted to the direct action of the gastric juice may suffer destruction. I am aware that many surgeons believe that only a jejunal wall damaged by the presence of a foreign body, such as an unabsorbable suture, is liable to peptic attack. There is undeniable evidence to the contrary, and the six cases here recorded add to it. In one of the cases a fragment of silk was found near the ulcer site, but not actually at the ulcer; in the other five cases there was no such foreign body. It is said that damage done by a clamp may be responsible for the ulcer, but two considerations negative this being a usual factor—the one that jejunal ulcer does not commonly occur at the clamp line, the other that many jejunal ulcers make their appearance long after any possible clamp injury must be presumed to have disappeared. As far as jejunal ulceration is concerned there is evidence that, given a certain chemical state of the gastric secretion, the normal jejunal mucous membrane will succumb to peptic digestion. I submit that the same holds good for the stomach and duodenum, and that if we have regard to the physiology of the gastric secretion, and more particularly to its intimate relations to pancreatic secretion,

the occurrence of gastric, duodenal, and jejunal ulceration, under conditions which disturb these relations, is explained.

The stomach consists of two segments, a fundal segment and a pyloric segment. The chemistry of these two segments may differ materially at any given moment: the fundus is occupied with salivary digestion in the early stages; the gastric secretion poured out from border cells and gland cells accumulates in the pyloric segment, and it is here that peptic digestion takes place. Langley compares the peptic activity in the pyloric segment with that in the fundal segment as 73 to 1. The pylorus is not a closed orifice during normal digestion. Quite early in the process small quantities of gastric juice and food pass into the duodenum, and in the cells of the duodenal mucous membrane the hormone of pancreatic secretion is formed. There is also a regurgitation of pancreatic secretion into the stomach. Rehfuss, using trypsin as an indicator of this regurgitation, has shown that it is regularly associated with normal digestion, and that the trypsin value is high in the presence of low acidities and low when the stomach contents are of high acid concentration. Boldyreff believes that gastric acidity is lowered to an optimum by this passage of pancreatic fluid. However that may be, pancreatic secretion, which on the one hand is evoked by the gastric secretion, on the other hand acts as a regulator of the activity of peptic digestion. There is thus a correlation, diphasic, between gastric secretion and pancreatic secretion. *This correlation is dependent on an intact pyloric mechanism.* We must not indulge the notion that it is the free acid of the gastric juice which is the noxious agent in producing gastric or duodenal ulcer. Free hydrochloric acid is absolutely innocuous in the concentrations in which it is met with in normal or pathological stomachs. It is merely a rough indicator of peptic activity; in fact, it can hardly be said to be even this, for the ratio of peptic power is not proportional to the acidity. What we can say is that, generally speaking, peptic attack only occurs in an acid medium.

Now we have been shown by the radiologist that in both gastric and duodenal ulcer there are certain departures from the normal in the motor functions of the stomach and the pylorus; that in gastric ulcer the stomach is characteristically hypotonic and retains its contents for an undue length of time; that in duodenal ulcer the stomach is hypertonic, and that there is hurry in emptying. In both cases there are certain departures from the normal in the pyloric mechanism. Hurst says that these motor aberrations are present before ulcer appears and persist after it has ceased to be clinically apparent. In other words, that they are primary, or at any rate precede and are independent of the presence of ulcer. What will be the effect of such aberrations on the correlation of pancreatic and gastric secretion? If the stomach is hypotonic, if there is pyloric spasm and stasis, there will be a failure in the hormone stimulation of pancreatic secretion, and on the other hand a failure in the regurgitation of pancreatic fluid into the stomach. Under such conditions the wall of the organ will be subjected to an unduly prolonged contact with a gastric juice which is unchecked and unregulated by pancreatic regurgitation. The gastric wall suffers damage under these conditions, and the damage may end in ulceration.

If, on the other hand, the stomach is hypertonic, if the pyloric sphincter allows, not the normal intermittent discharge of small quantities of acid peptic fluid into the duodenum, but the early flooding of the duodenum with peptic fluid before pancreatic secretion is active, the duodenal wall is then subjected to gastric juice of unchecked peptic activity. It is therefore in the duodenal wall that we find the ulcerative lesion when the functional aberration is that of hypertonicity and hurry. In an analogous way may be explained the incidence of jejunal ulcer after anastomosis. It occurs when the peptic activity of the gastric juice is high, and when for some reason the pancreatic secretion, which normally checks this activity, defaults.

It would appear, then, that we can find in derangements of the gastro-pancreatic correlation a sufficient explanation of the incidence of peptic ulcer (given a peptic secretion of high activity), and also reasons for its varying site. We have at present incomplete knowledge of the conditions which set up these primary functional disturbances; they themselves do not appear to be dependent on the chemistry of the gastric secretion, for hypersecretion and hyperchlorhydria are usual both in the hypotonic stomach of gastric ulcer and the hypertonic stomach of duodenal ulcer. We do know, however, that visceral disease elsewhere—for example, in the appendix and gall bladder—may be connected with such functional gastric disorders, and that the latter may disappear after surgical treatment of the focal disease.

In treatment we have regard to three main points:

1. The ulceration itself.
2. The activity, or excessive activity, of the gastric secretion, and the default of the mechanism which normally controls this.
3. The disturbances of motor function which precede and account for both.

Surgical treatment deals with ulcer (1) by methods of removal which leave no embarrassing deformity behind; (2) by anastomosis, which provides a permanent check on the peptic attack of the gastric juice; (3) by removing any focus of disease elsewhere.

All the cases reviewed here had had a lengthy period of medical treatment extending from many months to many years. I am aware that under the term "medical treatment" I include different types of treatment more or less thorough. Very high claims were made by physicians for what I may call the "satisfaction" method, the basis of which is the Lenhartz diet. I do not think that physicians are now satisfied with the permanence of results obtained by this method. That which is in most favour to-day is the "neutralization" treatment identified with the name of Dr. Sippy of Chicago. Dr. Sippy summarizes the claims he makes for this method in the *New Oxford Medicine*, vol. iii, p. 169. They are too long for quotation. I have been unable to find clinical records of a large series of cases treated by this method and followed over long periods afterwards. This is the most satisfactory evidence, and is most valuable if late results are recorded in the patients' own words.

The surgical remedy for duodenal ulcer is posterior gastro-jejunostomy. The anastomosis between stomach and jejunum must measure three inches in its long diameter, and it must encroach on the pyloric segment of the stomach. Some surgeons add to the gastro-jejunostomy an excision of the ulcer, others add occlusion of the pylorus. Failure to obtain permanent relief by gastro-jejunostomy is so exceptional that to add either the one or the other appears to be unnecessary. I have employed occlusion of the pylorus on many occasions; I do not think it has any effect on the result in duodenal ulcer, and I am doubtful whether it is physiologically sound. The activity of pancreatic secretion is likely to be checked if the gastric contents are excluded from the duodenum.

In gastric ulcer healing is most certainly brought about by removal of the ulcer. Can gastro-jejunostomy be relied on to so remedy the stasis in the stomach and the peptic activity of the gastric juice that ulceration will not recur? Certainly ulcer excision alone is not sound, and gastro-enterostomy alone cannot be relied on, and even in combination the results are by no means uniformly good. I may instance a case of ulcer of the lesser curvature for which, some two and a half years ago, I did posterior gastro-jejunostomy. This anastomosis is still anatomically satisfactory, but the ulcer did not heal, and I subsequently excised it. Relief was only temporary. The patient then naturally transferred himself to another surgeon, who removed the pyloric portion of the stomach as far as the anastomosis, and in this pyloric portion was a new ulcer. Yet gastro-enterostomy is a remedy of value even in inveterate gastric ulcer, but it is not the remedy of choice; a more radical procedure is advisable. That more radical operation is partial gastrectomy. The term includes two different procedures, either—

(*a*) Sleeve resection with gastro-gastrostomy; or
(*b*) Resection of more or less of the stomach, including the ulcer, closure of the duodenum, and anastomosis of the stomach and jejunum.

Sleeve resection I believe to have only a limited field; it is the operation of choice for mid-gastric cicatrized ulcer. In the presence of active ulcer it is open to the same objection as simple ulcer excision, in that it does nothing to modify the chemistry of the gastric secretion.

Partial gastrectomy combined with a gastro-jejunal anastomosis does two things: in the first place, it removes the ulcer and the ulcer-bearing area; in the second place, it renders the stomach incontinent and prevents finally the accumulation of a noxious gastric secretion.

In all the cases recorded the method employed was the posterior Polya or Reichel operation. I can imagine the anterior method to be a necessity if what remains of the stomach is too far removed from the mesocolic gap to sew the margins of this gap to the stomach wall; but this was possible in all these cases, and in none have there been signs of anastomosis

constriction such as Dr. Charles Mayo has recorded and which led him to prefer the anterior operation.

This operation is well borne. In my view the most important points in the technique are: first, such infiltration anaesthesia as to give satisfactory relaxation; second, sound closure of the duodenum; third, great care in suture of the stomach to the jejunum with small suture gaps; fourth, a watchful haemostasis throughout. In the cases recorded the post-operative recovery was free from complications, from undue shock, from haemorrhage, and from vomiting. The post-operative treatment is as follows: Sterile water is given at once and the patient is encouraged to suck formalin tablets—they allay thirst and keep the mouth clean; on the second day milk, sterilized and alkalinized; on the third day an egg, beaten up and divided, is added, and on this day medicine is started for the purpose of controlling the activity of the gastric juice—it contains bismuth carbonate, magnesia ponderosa, and tinctura belladonnae. As the diet is increased powders are given in addition, consisting of calcium carbonate and magnesia.

This operation is the one to be chosen in inveterate penetrating gastric ulcer. Whether it is feasible in a given case cannot be decided until the abdomen is opened. Probably in 10 or 15 per cent. of the cases in which it is desirable it will prove to be not feasible. Some alternative will then have to be adopted. The real alternative is a transgastric operation (excision, or cauterization, or suture, or a combination of these), together with gastro-jejunostomy. If the stomach is so fixed that a posterior gastro-enterostomy is difficult, there is the valuable alternative of pyloroplasty—Finney's operation. This operation, which I should perhaps call gastro-duodenostomy, aims at relieving stasis and modifying the chemistry of the gastric secretion, as does gastro-jejunostomy.

The best contribution to the study of the treatment of gastric ulcer, whether that treatment be surgical or medical, is the collection of careful records. We want to appreciate the immediate risks of operative procedures, the early results, the late results. We want to know much more as to the persistence of the favourable results that are claimed for methods of medical treatment. Impressions and opinions are of little value to the argument; the question requires the same kind of handling as a laboratory problem, and similar methods of recording and analysing results.

THE TREATMENT OF PERFORATED GASTRIC AND DUODENAL ULCER.

BY

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THE treatment of perforated gastric and duodenal ulcer is entirely surgical, and the prognosis largely depends on the time when operation is performed. Recovery is contingent on early diagnosis and prompt surgical treatment, for delay almost inevitably leads to a fatal termination. During a period of two years I operated upon a consecutive series of 46 cases of acute perforated gastric and duodenal ulcer at the Manchester Royal Infirmary. Four patients died following the operation, giving an operation mortality of under 9 per cent.

There is still considerable difference of opinion as to whether an ulcer which has perforated will, after operation, give rise to further trouble, and whether gastro-enterostomy is necessary. I have endeavoured to throw some light on this question by following up the after-histories of the cases in this series. The following are the details of the cases:

Sex and Age.

Forty-four of the patients were males and two females. It is remarkable to note the preponderance of the male sex. The youngest patient was 19 years of age, the oldest being a man of 71. The greatest number of perforations occurred between 30 and 60 years of age.

History of Previous Indigestion.

This could be elicited in most cases. In four patients perforation was the first sign, no previous gastric disturbance being present. In a considerable number of the duodenal cases the symptoms of previous indigestion were very slight.

Situation of the Ulcer.

Forty of the ulcers were duodenal or pyloric in situation. In only five cases were the ulcers found to be gastric. There was, in addition, one case of perforated gastro-jejunal ulcer.

Hours Perforated and Operative Results.

The time that had elapsed before operation is shown in the following table, together with the mortality rate:

Hours Perforated.	Duodenal Perforations.			Gastric Perforations.			Total Mortality.
	No. of Cases.	Died.	Mortality.	No. of Cases.	Died.	Mortality.	
1–12 hours	24	0	Nil	1	1	100 %	4 %
12–18 ,,	6	0	Nil	—	—	—	Nil
18–24 ,,	4	0	Nil	3	1	33 %	14 %
Over 24 ,,	6	2	33 %	1	0	Nil	28.6 %
Total ...	40	2	5 %	5	2	40 %	9 %

This does not include one case of perforated gastro-jejunal ulcer which recovered.

Mortality.

Four patients died following operation, giving an operative mortality of 8.7 per cent. for the series of 46 cases. Thirty-four cases of perforated duodenal ulcer were operated upon within twenty-four hours and all recovered. Six were operated upon after this period and four recovered; the patients who succumbed were both in poor condition when submitted to operation, and died in thirteen and eighteen hours respectively following operation, from shock. Of the five cases of gastric ulcer, two died subsequently from pulmonary complications. One died on the fifth day following operation from acute oedema of the lungs, the second succumbed on the tenth day after operation from broncho-pneumonia. Autopsies were held on both these cases. The ulcers were found to be large chronic spreading ulcers near the pyloric end of the stomach. Microscopical examination showed that both the ulcers were malignant, one being a glandular carcinoma, whilst the other was a spheroidal-celled carcinoma.

Death occurred in one of the patients subsequently from acute appendicitis. He had made an uneventful recovery following a perforated duodenal ulcer and had been discharged from hospital. He was readmitted shortly afterwards with a perforated appendix, and died following operation for this condition. All the remaining cases are, to the best of my knowledge, alive at the present time.

OPERATIVE TREATMENT.

Immediately the diagnosis of perforated ulcer has been made laparotomy should be performed without delay. Time should not be spent in attempts to improve the patient's condition; shock can best be relieved by early operation, and a successful result depends essentially on prompt treatment.

The technique of the operation is now so well known that it requires no special description. The perforation is closed with fine thread sutures passed at some distance from the edges of the ulcer. In cases of duodenal perforation the sutures are passed from side to side and thereby avoid narrowing the lumen of the gut. When tightened these infold the ulcer and a piece of omentum is then turned up and stitched over the suture line. I have always found it possible to close the ulcer successfully by suture. Any method other than suture must be attended with a high mortality owing to the danger of leakage.

The peritoneal cavity is carefully swabbed out with gauze swabs wrung out of very hot saline. Some surgeons advocate irrigation in preference to swabbing, but irrigation adds the diffusion of the extravasated material and increases the risk of subphrenic abscess.

The operation lasts twenty minutes, rarely longer, and subcutaneous saline may be administered whilst it is in progress with advantage. Drainage is seldom employed. In perforation of under eighteen hours' duration it is never necessary. After twenty-four hours when there is gross soiling it may be advisable. This is best done through a suprapubic stab incision and the tube removed as soon as possible.

After-Treatment.

The Fowler position is adopted as soon as the patient is returned to bed; rectal salines are given at four-hourly intervals for two days. For the first forty-eight hours the patient is only permitted small sips of water by the mouth; fluids in increasing quantities are given later. An enema is given daily, no purgative being allowed till the seventh day. The stomach is thus kept at rest as far as possible, and opportunity given for the healing of the ulcer to start. After discharge from hospital the patient is instructed to take a careful diet for six months. Sodium bicarbonate should be taken regularly for a time, as this appears to diminish any tendency to hyperchlorhydria, and defective teeth are attended to. This post-operative treatment, so often neglected, undoubtedly assists in obtaining satisfactory results after operation.

Should an Immediate Gastro-enterostomy be Performed?

There is at the present time no general agreement among surgeons as to the advisability and need for performing a gastro-enterostomy simultaneously with the closure of the perforation. Some surgeons advocate that this should be done as a matter of routine in all cases; but it is only by a comparison of the results and experience of different surgeons that the necessity or otherwise of this procedure can be determined.

Perforation of a gastric or duodenal ulcer is an acute crisis, and a successful result depends essentially on early and rapid operation. However quick the surgeon may be no increased risks are allowable, and time should not be spent where it can be avoided. The actual performance of the operation should occupy as short a time as possible, for prolongation must add to the shock and thereby increase the risk to the patient's life.

Lewisohn,[1] who is an advocate of primary gastro-enterostomy, says that the operative recoveries are not impaired by the extra loss of time involved. He, however, admits that a Murphy's button should be used in acute cases "to save undue lengthening of the operation." This contrivance has long since been discarded in England, on account of its dangers and disadvantages. Surely if he has to adopt this means to shorten the operation it were best to leave the gastro-enterostomy until a later date.

Paterson[2] states that he invariably performs a gastro-enterostomy after closure of the perforation, and thereby greatly improves the patient's immediate chance of recovery. He states that a number of patients die shortly after operation for perforation, either from perforation of a second ulcer, haematemesis, or leakage along the line of suture, and the mortality from these causes is 11 per cent. He considers that these deaths should, to a great extent, be prevented by a primary gastro-enterostomy. I submit these complications should be largely avoidable by making a careful search for a second ulcer and by care in suturing, whilst fatal haemorrhage following simple suture must be a rare event and is not unknown after a gastro-enterostomy. Further, Moynihan[3] has shown that even after a gastro-enterostomy a chronic duodenal ulcer may perforate, so that a gastro enterostomy does not necessarily exclude this risk.

In ulcers situated near the pylorus it is asserted that narrowing will be produced by the suturing, causing subsequent stenosis and recurrence of the symptoms. If the suturing has been carefully carried out this does not often appear to be the case, as I have proved by radiological examination of a number of cases at a later date. Even if some stenosis is produced this does not persist, and we know that attempts to produce occlusion of the pylorus often fail when that object is desired. Again, an immediate gastro-enterostomy is said to simplify the after-treatment and feeding, but I have experienced no difficulty from this cause, and recovery has usually been straightforward and given no anxiety.

It must be allowed that disappointments following gastro-enterostomy are not unknown, even when performed by the best surgeons and with the most approved technique. A gastro-jejunal ulcer is one of those unfortunate complications which occur in a small percentage of cases. Though doubtless a rare occurrence—perhaps 1 to 2 per cent. of all gastro-enterostomies[4]—the possibility must always be taken into account.

In the following case it is reasonable to assume that the man might have recovered with simple suture of the perforation and been able to lead a useful life, but instead his condition is far from satisfactory.

The patient, a male, aged 34 years, whilst on duty in France in May, 1917, was suddenly seized with acute abdominal pain. He was operated upon about three hours later at a casualty clearing station, where he was found to have a perforated duodenal ulcer. This was sutured and a gastro-enterostomy performed. He made a satisfactory recovery, and was placed on home service.

In February, 1919, he was admitted to the Manchester Royal Infirmary with symptoms of a perforated ulcer. The notes of the operation, which was performed by Mr. Alan Roberts, the assistant resident surgical officer, state: "A small perforation (peptic ulcer) found just beyond gastro-enterostomy; fluid in pelvis; ulcer sutured. Scar of old ulcer seen near pylorus; no drain." He was discharged from hospital four weeks later.

Just before midnight on June 2nd, 1920, he was again admitted with a third perforation. I operated immediately, and found a perforation on the line of the anastomosis. This was closed in the usual manner. He made an uninterrupted recovery, and went home on June 23rd.

Walton[5] advocates that a gastro-enterostomy should always be performed simultaneously with the closure of the perforation, except when the patient is very ill. In 51 recorded cases treated by this method he gives a mortality of 35.2 per cent. and states that this figure is admittedly high. Pfeiffer and Deaver[6] are also advocates of a primary gastro-enterostomy, and in their paper quote statistics to support this view. They assert that the mortality is not increased by this procedure if it is carried out quickly and not attempted in cases obviously shocked. They urge that gastro-enterostomy is the acknowledged treatment for an ulcer in the *pre*-perforative condition, and so should be combined with suture after perforation. There is, however, a considerable difference between the chronic duodenal ulcer for which a gastro-enterostomy carried out as a routine operation usually gives most satisfactory results, and the type of duodenal ulcer which undergoes acute perforation.

It is, I think, now generally recognized that there is a variety of acute perforating duodenal ulcer which, when treated by inversion and simple suture, may be followed by a permanent recovery and no subsequent symptoms make their appearance; whereas a second type of ulcer, treated on similar lines, may be followed by a persistence of symptoms which can only be relieved by a further operation. One must admit that it is difficult to find a satisfactory explanation of this fact, owing to our lack of real knowledge of the cause of gastric and duodenal ulcer.

An ulcer is probably produced by the action of bacterial toxins, or, as Mayo[7] has suggested, by a localized thrombosis or infarction emboli of bacteria, causing a lowering of the resistance of the mucous membrane, which then undergoes digestion in the presence of the gastric juice.

Now certain cases of ulcer, particularly the small and soft type of ulcer, will under careful medical treatment heal; and, again, other cases after perforation and simple suture may show no evidence of ulcer when examined at a later date. To explain the mechanism whereby some cases fail to heal under the above conditions it is suggested that there is some accessory factor present which prevents healing and leads to a continuation of symptoms.

What this additional factor may be is at present unknown; it may depend on some abnormal condition of the gastric juice, or perhaps it is dependent on some product of bacterial activity.

It appears probable, then, that there is a type of acute perforating ulcer, more commonly found in the duodenum, which, when put at rest by infolding and suture, combined with careful diet, will result in healing. If an ulcer can heal under these conditions—and that this may happen is shown by the evidence of healed scars—it is surely better to leave the stomach in its natural condition without the added complication of a gastro-enterostomy; whereas if the ulcer should subsequently prove to be of the unhealable type, a gastro-enterostomy can be performed with greater safety at a later date to relieve the symptoms. As is subsequently shown, a gastro-enterostomy does not appear to be necessary in a large proportion of cases.

The Need for Secondary Gastro-enterostomy.

It has already been pointed out that there are a number of cases which appear to heal after suture and give rise to no further symptoms, and it is only by carefully following up the after-histories in these patients that it is possible to tell what the ultimate result will be in each case. With this object in view I have followed up the after-results in the 37 surviving cases of perforated duodenal ulcer in this series treated by simple suture. The period that has elapsed since operation varies up to two and a half years. In four of these cases a secondary gastro-enterostomy became necessary at a later date.

Twenty-eight patients have for periods up to two years remained free from any gastric disturbance. Five patients suffer from symptoms of digestive discomfort; these have been so slight and their general condition is so satisfactory that further treatment has not been considered necessary. Twenty-four of these patients have been readmitted to hospital, at different periods after their operation, for radiological examination of the stomach and duodenum. This has been kindly carried out for me by Dr. J. B. Higgins, radiological registrar to the Royal Infirmary.

The *x*-ray examination was carried out with special reference to the condition of the stomach itself, whether there was any evidence of delayed emptying, and if any degree of pyloric obstruction or spasm was present.

The report of the radiologist has been identical in twenty-two cases. He states: "The stomach emptics satisfactorily, and there is no delay in emptying. The food passes the duodenum normally, and there is no obstruction." Some irregularity of the duodenum was noticed in several of the cases. In two cases he reports: "The stomach was atonic and the duodenum was not satisfactorily filled." The first of these cases has been free from indigestion since his operation. The second keeps well unless he eats a heavy meal; then he feels some discomfort and flatulence.

A study of the after-histories of cases of perforated duodenal ulcer treated by simple suture shows that in the series under review 90 per cent. of cases required no further operative treatment. Apart from the cases already mentioned, no patient had reported himself as having relapsed up to the time of this record. In 10 per cent. of cases a secondary gastro-enterostomy was necessary on account of recurrence of gastric disturbance; the results of this operation have been completely satisfactory.

These four cases all gave a history of indigestion extending over a prolonged period, and at the operation were found to have chronic ulcers. The symptoms of indigestion recurred within a few months after perforation. It would appear from this that cases giving a long history of indigestion are less likely to show a permanent cure after simple suture than cases with a short history and mild symptoms.

Subsequent Treatment in Cases of Perforated Gastric Ulcer.

The after-treatment in these cases requires special consideration. It is undoubtedly a fact that perforated gastric ulcer is a more serious condition than perforation of a duodenal ulcer, both as regard its immediate and remote results.

Of the five cases of gastric perforation which came under my care two were proved to be malignant at necropsy and microscopic examination. A third case appeared malignant at operation and was in poor condition when he left hospital; he was alive two months after operation, but has not been heard of since that time. The fourth case, a female with perforation of a large chronic ulcer in the anterior stomach wall, still suffers from pain after food, but refuses further operation.

The last case has written to me recently from Birmingham, where he was in hospital under treatment. He had a perforation of the anterior stomach wall about one inch in diameter, and had suffered from indigestion for years. He states that he still suffers from flatulence and vomiting, and it would appear as if some further operative treatment will be necessary. It is not within the scope of this paper to discuss the relationship of ulcer and carcinoma of the stomach, but it must be realized that the types of ulcer found in the stomach and duodenum differ widely.

The duodenal ulcer is often a simple, small, punched-out ulcer, whilst the gastric ulcer may be a large chronic and spreading area. Further, the fact that a malignant ulcer of the duodenum is almost unknown, whereas the malignant ulcer of the stomach is of comparatively common occurrence, must be remembered. It is suggested, therefore, that it might be safer to regard all large and chronic ulcers of the stomach as potentially malignant, and treat them as such at a later date by some form of excision wherever practicable. This would be more likely to produce a permanent cure than a gastro-enterostomy alone, which operation is often unsatisfactory for this condition.

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IN the United States during 1920 lethargic encephalitis was given as a cause of death on 1,505 death certificates, a death rate of 1.7 per 100,000 of the population; in New York State 364 deaths from this cause were reported, a death rate of 3.5 per 100,000 of the population.

A RECENT report issued by the United States Public Health Service announces the demonstration of an anaerobic organism producing a soluble toxin which affects animals in a manner similar to that of the botulism organism, but is not neutralized by polyvalent botulinus antitoxin. The organism apparently differs markedly from the botulinus isolated in the United States, and is possibly more nearly related to the European type described by von Ermengem in 1912, although it differs from this in certain respects.

HEREDITARY MICROPHTHALMIA.

BY

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ASSISTANT COUNTY MEDICAL OFFICER, LANCASHIRE.

IN presenting the following history of a family affected with hereditary microphthalmia I will refer to statistics in order that the prevalence of congenital blindness may be appreciated. The most recent reference is in an article on "Cause and prevention of blindness," by Mr. Bishop Harman, in the BRITISH MEDICAL JOURNAL.[1] Of the total number of cases of blindness between 3 and 4 per cent. are congenital; Magnus, in Germany, found 97 cases in 2,528 cases, or 3.83 per cent.; Trousseau, in France, 3.04 per cent.; Dumont, in the Paris Blind Asylum, 3.7 per cent.; Oppenheimer, in New York City, 3.84 per cent. In the United States of America, according to the census of 1890, of 50,411 blind, 4,267, or 8.46 per cent., were recorded as congenitally blind.

Heredity and Consanguinity.

In the eleventh U.S.A. census 43,326 blind persons reported 8,342 blind relatives—that is, 19.25 per cent. had such relatives; whilst of 4,156 congenital blind, 1,608, or 38.7 per cent, had blind relatives. From this it appears that the proportion of blind relatives was twice as great amongst the congenital blind as amongst the blind from all causes.

Mr. Bishop Harman, referring to congenital defects, says: "A few are hereditary—that is to say, the same defect is found repeatedly in the same family for two or more generations."

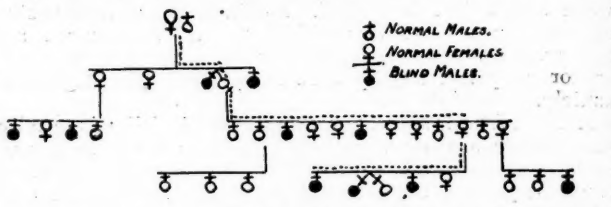
The influence of consanguinity was investigated by Trousseau,[2] who reached the conclusion that, "independent of heredity, consanguinity does not play any rôle in the production of blindness." Magnus also holds that there is no proof that consanguinity is a cause of blindness.

That heredity is a cause of blindness seems certain, as the cases which I am reporting go to prove. The diseases of the eye which are most frequently transmitted from parent to offspring are:

Malformation—for example, coloboma of iris and choroid.
Microphthalmia.
Persistence of the pupillary membrane.
Congenital cataract and amblyopia.
Nystagmus.
Albinism and retinitis pigmentosa.

These may be transmitted in the same or like form. It is, perhaps, not out of place to mention here that myopia is frequently hereditary. Motais, quoted by Trousseau,[3] stated that 67.5 per cent. of cases of myopia are hereditary.

The accompanying genealogical tree of the "H." family,



which goes as far back as the great-grandmother, shows that amongst thirty-four traced members there are eleven cases of congenital blindness. I was unable to obtain any definite history of members of the family farther back than the great-grandparents. All the affected members are males, the condition being transmitted through healthy females, as in haemophilia; the children of male members of the family are normal. In that branch of the family in which I have been particularly interested it will be noted that of four boys three are blind from congenital microphthalmia, whilst the twin brother of one of the boys is normal. The one female child is normal. The father and mother of this branch are normal persons. In fact, the parents of all the blind children throughout the family are apparently normal individuals. There is no evidence of consanguinity in the family and no history or evidence of syphilis. One of the boys of the "H." family is an epileptic; all the other children are free from congenital or acquired disease apart from microphthalmia.

One of the boys in the "H." family has been for some time in a blind institution. His report for last term states:

"Distinct speaker. Intelligent. Excellent memory and no mannerisms. Self-control good. Intends to study music. Eye report: Congenital microphthalmia."

Recently the other two boys were admitted to the same institution, but the epileptic, on account of this defect, had to be discharged.

Prevention.

From the genealogical table it will be seen that the tendency to transmit blindness by the females shows no sign of diminishing, but rather of increasing. Through how many generations the condition may be handed on it is impossible to conjecture. Marriage and parenthood should be avoided by the members of this family, especially by the females. The male members show no tendency to transmit the disease as far as can be ascertained.

I am indebted to Dr. J. J. Butterworth, County Medical Officer of Health, Lancashire, for permission to publish this case, and to Mr. W. H. Illingworth, of Henshaw's Institution for the Blind, Old Trafford, for allowing me to make use of the report on one of the cases.

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[1] BRITISH MEDICAL JOURNAL, November 5th, 1921. [2] Norris and Oliver: *System of Diseases of the Eye*, vol. ii, p. 441. [3] *Hygiène de l'oeil*, p. 134.

THE INTERPRETATION OF SYMPTOMS IN DISEASE OF THE CENTRAL NERVOUS SYSTEM.

ABSTRACT OF THE GOULSTONIAN LECTURES, DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS,

BY

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LECTURE II.

IN his second lecture Dr. Feiling dealt particularly with alterations in muscle tone and changes in reflexes. Alterations in muscle tone were one of the most common and most important symptoms of disease of the central nervous system; therefore the recognition and interpretation of the more characteristic of these changes was very necessary. He did not propose to discuss the exact mechanism by which these changes were produced; he restricted himself to emphasizing the clinical value of an appreciation of the different changes of tone.

Hypertonus or Increased Tone.

With regard to hypertonus, the terms "spasticity" and "rigidity" were applied more or less indiscriminately to states in which the musculature of the limbs exhibited an increased tone. The textbooks stated that it was lesions of the upper motor neuron which caused such spasticity. This was true, but was far from being the whole truth. The upper motor neuron was a very complex mechanism, by means of which many different systems of fibres acted on the lower motor neuron. It was possible to distinguish broadly between the hypertonus of pyramidal lesions—that is, lesions interrupting the cortico-spinal tract—and that of extrapyramidal lesions, not merely by any differences in the reflexes, but by the intrinsic characters of the hypertonus itself. Thus in hemiplegia due to a vascular lesion of the internal capsule or its neighbourhood, after the preliminary stage of flaccid palsy, if the limbs became spastic, the characters of this spasticity exemplified the particular changes in muscle tone which occurred in lesions of the pyramidal tracts. There was a marked difference between the arm and the leg. The leg was stiff in a position of extension, but in the arm it was the flexors which showed increased tone, the characteristic attitude of the arm being adduction at the shoulder and flexion at the elbow and wrist joints. Cases due to cortical or subcortical lesions did not usually show so great an increase of tone. In the arm the hypertonic muscles would yield to firm passive extension at the elbow-joint. They often gave way somewhat suddenly, so that, unless contractures had occurred, the arm could be almost fully extended. If the arm were then flexed again at the elbow, and the patient told to extend it himself, there might be extension to some point, and then the flexor muscles became tonically contracted and so prevented further extension.

But in disease of the extrapyramidal motor system the position was different. Paralysis agitans, for example, began in many cases with a hemiplegic distribution of symptoms, and might remain in this state for a considerable time, the onset of the tremor being delayed perhaps for many months. Abdominal and plantar reflexes, especially in old people, were not always easy to elicit. The character of the hypertonus was different here from that in hemiplegia due to lesions of the pyramidal tract. Instead of finding hypertonus in the flexors of the arm and extensors of the leg, there was a diffused rigidity affecting all muscles more or less equally, and not altered by voluntary or passive movements of the limb. This was often found in cases of encephalitis lethargica, apart from the cases which exhibited the Parkinsonian syndrome.

Wilson, in his original description of progressive lenticular degeneration in 1912, clearly distinguished between the universal diffused stiffness of muscles in that condition and that found in the ordinary cases of hemiplegia. In spastic paraplegia due to disease of the spinal cord a careful study of the nature and distribution of the rigidity present could give a valuable insight into the degree of damage to the cord. These differences in the character of the hypertonus has been emphasized by the study of cases of gunshot injuries during the war, and notably by the work of Head and others. Lesions of the cord which, on the motor side, interfered with the function of the pyramidal tracts only, would cause paraplegia in extension. More severe lesions produced paraplegia in flexion. In some cases this study might also help in localizing the anatomical site of the lesion, and aid in determining the nature of the pathological process, for the more peripherally placed lesions would involve more the pyramidal tracts, with the production of paraplegia in extension; and the more centrally placed lesions would tend to involve other tracts as well, with the production of paraplegia in flexion. This was of real value in the matter of prognosis.

Decerebrate Rigidity.

Dealing next with decerebrate rigidity, the lecturer said that numerous observers had recently claimed to have found in certain disorders of the central nervous system a clinical picture under this name. Wilson had reported cases in which, with impairment of consciousness, there was tonic rigidity of trunk and limbs, with exacerbations in the form of tonic or postural fits. The typical posture was with arms rigid, adducted at the shoulder, strongly extended at the elbow, with internal rotation and marked pronation of the wrists. In Wilson's cases the pathological conditions found were very various, including cerebral tumour, cerebral haemorrhage, and tuberculous meningitis. Recent papers, however, did not fully agree with Wilson's views, and it was pointed out that only in the matter of posture did the picture resemble that of decerebrate rigidity, and that there was lacking the other characteristics, particularly those described by Sherrington. As to whether conclusions of clinical value could be drawn from these cases, the lecturer said that this phenomenon represented disturbance of function only; it did not necessarily indicate permanent structural disease. He quoted cases in which, although the posture was almost exactly similar, the pathological cause varied greatly. One was that of a child aged 2½ years, who was admitted on account of optic neuritis, and during the two months of his illness lay unconscious, flat on his back, with the extensor muscles of the neck and trunk stiff, the eyes being in a position of spasmodic convergence. There was the typical meningeal cry. The positions of the limbs were those already described. After death there was found an infiltrating tumour of the brain, of sarcomatous type, occupying the whole mid-brain, and extending into the crura on each side. The picture, indeed, gave no indication of the pathological process at work; it was merely a sign of disordered function: a lesion had upset the normal balance between the many different systems of fibres which acted on the motor neuron, allowing some particular system to exert an abnormal effect.

Ramsey Hunt had recently elaborated a theory of the dual nature of the motor system. This supposed the existence of two systems: (1) kinetic, (2) static—the first associated with movement, the second with the maintenance of posture. Movements and postures were regarded by Hunt as of three varieties—reflex, automatic associating, and isolated synergic. Also he postulated three divisions of the nervous system: segmental, paleo-encephalon, and neo-encephalon, each of these containing the two different motor systems—that is, kinetic and static. There was not yet available sufficient accurate knowledge of the functions of the extrapyramidal system alone to warrant the acceptance of this hypothesis in its entirety.

Hypotonia was present in some cases, such as severe instances of acute anterior poliomyelitis. Lesser degrees of

it were often overlooked, yet it was an important guide both as to regional diagnosis and concerning the patient's disability. Lesions of the spinal nerve roots might be responsible for hypotonia. Opinion now in the main inclined to the belief that hypotonia was one of the leading symptoms in disease of the cerebellum or of its efferent nerve tracts; and Gordon Holmes had shown that it was in acute or recent lesions especially that hypotonia was most characteristically found.

Reflexes and Their Limitations.

In the past the study of reflexes and their limitations had tended to dominate the investigation of nervous disease to the neglect of other symptoms, largely because of the greater ease with which disturbances of this kind could be examined as compared with the time and trouble required to investigate alterations in sensation, motion, and changes of tone. Perfunctory testing of reflexes had been too often considered a sufficient examination of a case, and especially in the presence of gross exaggeration was supposed to be diagnostic of organic as against functional disease. This partial truth had led to much confusion and difficulty. The reflexes were of three kinds: (1) Superficial or cutaneous; (2) deep or tendon; (3) organic or motor. As to the oculo-cardiac reflex—pressing firmly on the eyeballs and noting the amount of the slowing of the pulse which occurred, or its absence—Dr. Feiling had not found it to possess any clinical value. The Achilles jerk was best tested with the patient kneeling, and he regarded it as of equal value to the knee-jerk, especially in cases in which the lower parts of the spinal cord or the chorda equina might be involved. In eliciting the cutaneous reflexes the skin should be warm. Abdominal reflexes were apt to be feeble in people with a pendulous abdomen. With regard to reflexes in general a difference on the two sides was much more important than any quantitative symmetrical alteration.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HAEMORRHAGIC COLITIS.

THE interesting communications on haemorrhagic colitis by Mr. Geary Grant (February 25th) and Mr. Lockhart-Mummery (March 11th) encourage me to report the successful treatment of a severe case under my care in 1909. It is the only case of this nature which I have had to treat, and it gave occasion for the one and only operation for appendicostomy that I have performed; for this reason perhaps I have a very vivid recollection of the circumstances. The successful result I attribute to the rationale of one of the methods of lavage adopted after the operation, which I believe had not been entertained previously as a weapon in combating the infection of the colon.

In December, 1908, I was asked by a fellow practitioner to see a man, aged 25, who had been suffering since the previous September from frequent diarrhoea. Early in November he had to take to bed, and the motions, eight to twelve a day, were accompanied by much blood and mucus. There was no evidence of tubercle; he was "running a temperature," was extremely emaciated and anaemic and feeble; had lost nearly 3 st. in weight from his normal 9 st.; pulse frequent, great thirst, tongue dry and raw, face drawn and anxious. There were several badly decayed teeth, and the breath was foul. He appeared to be in the later stages of exhaustion, and though recovery seemed doubtful I advised that he should be removed to hospital and have appendicostomy performed, with subsequent lavage of the colon, on the lines suggested by the late Mr. Keetley, who, I believe, was one of the first to advocate this operation in colitis. Early in January, 1909, he was taken to the cottage hospital, and there I fixed the appendix to the abdominal wall, opening it up a few days later. His condition at this time was very bad, accentuated doubtless by the operation and anaesthetic. There was constant passage of blood and mucus, extreme exhaustion, and vomiting had commenced. After opening the appendix a variety of injections was tried. I can remember saline, hazeline, Condy's fluid, protargol; from a pint to a quart of these was given twice or three times daily, and each in turn for five or six days. China clay emulsion had not then come into vogue.

I can recollect some slight improvement with the Condy's fluid, but at the end of January his condition had become desperate; he was quite apathetic, was turning his face to the wall, and the stools, though less offensive, were frequent, and contained much blood and mucus. It was evident that merely washing out the bowel with large quantities of such mild antiseptics as could be borne was not adequate to stop the infection, and it occurred to me that it might be possible to combat it in another way—namely, by keeping the bowel charged with a dominant and antagonistic micro-organism such as the lactic acid bacillus, growing in an acid medium, with the hope that it might crowd out or displace the *coli* group and its auxiliaries, which flourish under the normal (alkaline) conditions of the colon. Sour milk prepared by inoculation with a liquid culture of *B. bulgaricus*, and incubation for forty-eight or more hours, was employed, and a quart of this was used for irrigation of the bowel through the appendix opening twice or three times daily. Within a few days distinct improvement was noticed: the stools were acid, with less blood, and much less offensive, and the tendency to vomiting ceased. The sour milk irrigations were kept up for about a month, being gradually diminished in frequency and amount; blood gradually disappeared, and the patient's general condition improved in every way. He left hospital in May, 1909, convalescent, weighing 7 st., and resumed his work as a clerk in September, 1909, weighing 9 st.

In view of the possibility of recurrence the appendix was kept open until October, 1911, when it was closed by Mr. Bailey, F.R.C.S., in St. Bartholomew's Hospital.

I have recently seen this patient after many years; he is in perfect health, was placed in Class B for war service, is now married and the father of a healthy child. There is a slight bulge at the site of the appendix opening; otherwise the scar is narrow and firm.

There is nothing, of course, new in the idea of using an innocuous organism or its products to antagonize the pathogenic effects of a harmful one, but the striking results in this case were so obvious that it is perhaps worthy of record, and I should be interested to hear if this method, or one based on similar reasoning, has been employed by others.

Wimbledon. JOHN A. HAYWARD.

MR. LOCKHART-MUMMERY'S remarks (March 11th, p. 412) on the comparative rarity of this disease, and the value of appendicostomy in it, tempt me to write a brief account of two similar cases, the only ones I have seen in twenty years; in neither was a sigmoidoscopic examination made, so I am unable to say if the condition of the colon was the same as Mr. Geary Grant described, or was one of ulcerative colitis with an open vessel in the base of an ulcer, but I imagine this is not of great moment from the point of view of treatment.

CASE I.

A young woman, aged 23, was sent into hospital as a case of colitis with severe haemorrhage, which had been going on for a fortnight. She passed daily 3 or 4 oz. of blood, which was judged to come from about the sigmoid flexure.

She was treated medically, and was given on alternative days large wash-out saline enemata followed by an enema of a pint of solution of protargol; all this was done in the knee-elbow position. For a time it had no effect in checking the bleeding, and my anxiety was becoming acute because she was getting blanched; but happily she then began to lose less and at the end of six weeks the bleeding ceased.

She was kept in bed for a further six weeks, with no signs of a recurrence, but on her first day out of bed the bleeding started again and was nearly as bad as before.

Treatment on the same lines was again begun, and the result was rather more rapid than before, but after four months in bed the bleeding began again as soon as she walked about. The medicinal treatment and the enemata were on both occasions continued for some time after the bleeding ceased.

She had come into hospital on October 8th, 1913, and we were now in the middle of April, 1914, and she was no better. I did appendicostomy, and in a week or two the bleeding ceased and did not return. The rapidity of cure, and the ease and efficiency with which the large bowel was washed out, formed a marked contrast with the methods and results achieved before the operation. She left hospital in due time, and came to me again four years later for the cure of a hernia which had occurred through the abdominal wall by the side of the appendix. She had no return of colitis.

CASE II.

The second case, a girl aged 11, admitted in 1915, was similar in all particulars, save that after a period of observation I straightway did appendicostomy with most satisfactory results.

While on the subject of appendicostomy I may mention that in two cases of perforated gastric ulcer with great soiling of the peritoneum, instead of draining Douglas's pouch by a tube through an incision above the pubes, I have done appendicostomy, drained through this wound, and immediately opened the appendix; through this I was able to run in saline, aperients, and peptonized food (the latter half a pint or more at a time) as the occasion demanded. It appears to me that it is an immense advantage to be able to do this in a patient who is always suffering from shock, general peritonitis, and almost certainly post-anaesthetic vomiting, and, moreover, has a recently stitched up hole in his stomach.

Sherborne, Dorset. T. MACCARTHY M.R.C.S., L.R.C.P.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

MALAYA BRANCH.

AT the annual meeting of the Malaya Branch of the British Medical Association, held at Singapore on January 27th, of which an account has been given in the SUPPLEMENT (April 1st, 1922, p. 94), a number of important papers were read, followed by discussions.

Dr. W. FLETCHER read a paper (prepared in conjunction with Dr. A. T. STANTON) on melioidosis, a new disease of the tropics resembling glanders. An abstract of this paper was published in the EPITOME of February 11th, 1922 (p. 24, par. 148). A discussion followed the reading of the paper, and in his reply Dr. Fletcher said that the disease had been diagnosed during life in four cases only. Specimens of blood, urine, and faeces should be sent for laboratory examination in suspected cases.

Dr. J. R. KAY-MOUAT, acting principal of the Singapore Medical School, read a paper upon the functions of a medical school, with reference to local conditions.

He said that the chief duties of a medical school were the dissemination of medical knowledge by the education of students, post-graduate instruction, and literary facilities; the advancement of medical science by research, discussion, and publications; and the maintenance of professional unity by *esprit de corps*, social intercourse, and selection of personnel. In Singapore the College of Medicine had been established with a full-time staff, thus eliminating the evils of irregular teaching and inadequate control. Admission of the students had been controlled by raising the standard of the entrance and scholarship examinations, and granting Government-indented scholarships only to the few best candidates. The plans had been approved for the new medical school, which showed medium-sized classrooms, a large lecture hall and museum, an extensive library, and ample post-graduate and research facilities. Now, when the General Medical Council had recommended the Singapore qualification as qualifying for practice in England, the College aimed at maintaining a standard equal to the British average standard, and recent successes by their students in the higher examinations in London showed that there was no need for anxiety.

The Hon. Dr. D. J. GALLOWAY said that he had been connected with the medical school since its inception, and he now noticed a very great improvement in the standard of the students. He believed that a circumstance of the greatest value to the future school was its proposed inclusion as the medical faculty of the Raffles University of Singapore.

Mr. K. BLACK, F.R.C.S., read a paper upon a defect in the sterilization technique, and later showed some interesting and obscure cases of eye disease among the inmates of the native hospitals.

After Dr. Kay-Mouat had entertained the members to lunch at the Hotel St. George the meeting was resumed, and Dr. MALCOLM WATSON read an interesting paper upon "Quinine and the quinine controversy."

He said that when it was considered that quinine had been known to European medicine for nearly 400 years, and that at the present time hundreds of medical practitioners used it daily in the treatment of malaria, it was remarkable that there was no unanimity in fixing the optimum dose or method of administration. Dr. Watson gave a summary of the history of modern experiments in quinine administration, and said that for some seventeen years he had watched labour forces under the influence of various doses. There were four factors in the experiments—namely, quinine, man, the mosquito, and the malaria parasite. Malaria was not always the same in severity or intensity, while the mosquito was a factor of almost bewildering variety. Man was also a variable factor, some races, such as the Malayalees, being more susceptible to malaria than others, and he rather thought that in a mixed labour force of Tamils and Malayalees, the Tamils, even without quinine, would maintain better health than Malayalees with it. In regard to quinine prophylaxis, he considered that in an intensely malarial place it should certainly be taken, not with the idea that it would prevent infection, but that it reduced its severity. In a less malarial place, where one might expect to live for many months without being likely to contract the disease, it was less important for healthy people to take it; in such places it was, however, important to give quinine continuously for at least three months to those who did contract the disease, which would certainly reduce the danger to others. In regard to the dose, at least 10 grains daily should be taken, preferably in solution and with meals—he laid particular stress on the last point.

In the discussion which followed Dr. KAY-MOUAT commented upon the possibility of the dangerous effects of taking quinine sulphate which had been kept for a considerable period; many other members gave their experience of quinine prophylaxis.

Dr. H. J. GIBBS read a paper upon the subject of ethics, tracing its influence in medical practice from Greek mythology.

Reports of Societies.

THE ROUTE OF RENAL INFECTION.

MR. KENNETH WALKER, at a meeting of the Section of Urology of the Royal Society of Medicine on March 30th, introduced the subject of renal infections, and gave an account of his experimental work on the method of spread. The history of this subject, he said, illustrated the tendency for the pendulum to swing from one extreme to the other in any controversial matter. Ten or twenty years ago a good many infections which were now regarded as blood infections were looked upon as infections spreading from the bladder to the kidney. With the improvement of diagnostic methods it was found that the majority of these infections were not true ascending infections, and observation of animal experiments proved that infection did not spread so readily from the bladder to the kidney as was supposed. Two conditions were necessary for such spread—namely, obstruction of the flow of urine, and incompetence of the valve guarding the entrance to the bladder—and these were not conditions found in ordinary cases of renal infection. Thereupon the pendulum swung right back so that for a time it seemed to be denied that infection ever spread from bladder to kidney except as a complication in very grave urinary trouble such as complete retention. He believed that this was to disregard certain possible routes of infection, especially the lymphatics which ran around the ureter and into its muscular coat, though he would not say that this was as common a route of infection as the blood stream; it was impossible to tell how common it was. The first experimental work done on this subject was by an Italian, Paladino Blandini, who inoculated the urethrae of guinea-pigs with some definite organism and after an interval of twelve hours made a careful bacteriological examination of various portions of the genito-urinary tract. He found that after twelve hours he could recover the organism at the upper end of the ureter and at the kidney. The lecturer had repeated this experiment, inoculating the anterior urethrae of guinea-pigs with *B. prodigiosus*, and killing the animals after from thirteen to eighteen hours. The heart's blood on each occasion was found to be sterile, and yet in each animal one got a luxuriant growth from the upper end of the ureter. The kidney, stripped of capsule, was sterile, and, in spite of this infection of the upper end of the ureter, the urine also was sterile. He had used, instead of organisms, carmine particles, and had recovered these from the upper end of the ureter. He tried also Gram-positive organisms which he could stain, and, although in this case there were no organisms in the ureter, outside the ureter, presumably in the lymphatics, there were masses of such organisms. He instanced the corroborative experiments by Teale and Embleton in a communication to the Section of Pathology of the Royal Society of Medicine in 1914; these workers described a bacterial spread by the lymphatics.

More recently (Mr. Walker continued) he had had the opportunity of following up the investigation in the *post-mortem* room on the case of an old man who had been admitted to hospital with complete retention; and again in a clinical case, a woman admitted for dysmenorrhoea, who developed kidney trouble subsequently, and on whom he operated. Here he found periureteric infection and infection of the perirenal tissue, which appeared to have ascended. Both the *post-mortem* and the clinical case confirmed the results of his animal experiments, that organisms did reach the upper end of the ureter, and perhaps also the kidney, presumably by way of the lymphatics. It might seem as though the organisms, to reach the kidney, would have to travel against the direction of the lymph stream, but it had to be remembered that the lymph stream was sluggish and indefinite, with cross-waves and channels. He pictured the various connexions of the lymphatics, and pointed out (bearing on his clinical case) how in the female the lymphatics of the ureter were connected with those of the genitalia. What was true of pyogenic organisms he thought might also be true to some extent of the tubercle bacillus. Perhaps it was rash of him as a surgeon to enter the province of the physician, but it was an interesting speculation whether the readiness with which organisms reached the kidney by way of the lymphatics might not explain the etiology of certain types of chronic interstitial nephritis. Although the etiology was still in dispute, he believed that this was more and more regarded as an inflammatory and infective lesion. It was generally

assumed that the infection reached the kidney by way of the blood stream, but one had to consider the possibility that it was by way of the lymphatics. The lesion which would be caused by repeated lymphatic infection by an organism of low virulence would be fibrosis of the cortical area with thickening of the capsule. The fact that no evidence of this chronic irritation of the kidney would be furnished clinically by examination of the urine for organisms rather lent support to the theory that repeated invasions of the superficial lymphatic plexus might be the cause.

His conclusions were (1) that although the blood stream was the commonest route by which an infection reached the kidney, organisms might also reach it by the lymphatics around and in the ureter; (2) that the kidney capsule was an important link in this lymphatic chain, and was the situation in which organisms were most consistently found in cases of ascending infection; (3) that in early cases of lymphatic infection of the kidney no organisms were found in the urine; (4) that there were reasons for believing that the tuberculous infection of the kidney might take place along a precisely similar route; and (5) that the lymphatic route might explain some cases of chronic nephritis, and it was possible that decapsulation might not be without effect on the development and progress of such a condition.

Sir THOMAS HORDER, who presided, said that many of those present were aware that Mr. Kenneth Walker had been interested in this aspect of urinary tract infection for a number of years, and it was a good thing to have a somewhat epitomized version of his work before them. He would not care to undertake a criticism of the experimental work involved, nor to estimate the extent to which Mr. Walker's conclusions were justified. But one obvious criticism might be stated in the form of a question: Was the distribution of an organism as found on section necessarily indicative of the route by which the infection had taken place? Granted that it was highly suggestive, was it conclusive? He instanced the condition sometimes encountered in undoubted haematogenous infection, such as by *Staphylococcus aureus*. One of the first clinical expressions of the pyaemic state so caused might be a perinephritic inflammation, proceeding rapidly or slowly to suppuration. It was taken for granted, in such a case at all events, that the route of infection was the blood stream; but if the same kind of observation and deduction were applied in this case as Mr. Walker had applied in the case which he considered afforded clinical corroboration of his lymphatic stream theory the same conclusion might be reached. Even in the *post-mortem* room the actually infected portion of the kidney demonstrable in the case of pyaemia the result of *Staphylococcus aureus* infection was very small, whereas the involvement of the kidney capsule and the perirenal tissue was very great. But the same thing applied to other structures and other lymphatic systems than those of the kidney. It was the same in the lung. The first clinical evidence of the thoracic pyaemic state in *aureus* septicaemia might be not the existence of a true pulmonary lesion but the existence of pleurisy, and yet it was well known that the pleurisy was really secondary to the lung involvement. He might quote subphrenic abscess as another instance. He was very doubtful whether the clinical case which Mr. Walker had brought forward did much, if anything, to confirm his conclusions. The inference was that the supposed trauma of the cervix in this young woman was the cause of the periureteral infection; but there were other possibilities. The kidney might have "flared" as a result of a haematogenous infection, even though the blood stream was found to be sterile. But the whole subject was so important, and so little was known at present about routes of infection, that one could only welcome the very solid and important addition to the general knowledge which Mr. Walker by his experiments extending over many years had contributed. It was a subject the study of which should be extended both by experimental work and by the correlation of clinical observation therewith.

Mr. FRANK KIDD said that he had the highest admiration for Mr. Kenneth Walker's work, but clinically he did not feel justified in going so far as Mr. Walker had gone in his deductions from his animal experiments. He referred to the rarity of bilateral tuberculosis of the kidney as rather against his suggestion of the tuberculous infection going down the ureter on one side and apparently going up on the other. Dr. DENNIS EMBLETON referred to some work which he and Dr. Teale had done since the publication of their former paper, which bore out what Mr. Walker had said regarding the ascending infection, but he pointed out that the process of spread was very slow, which might explain the point raised in objection by Mr. Kidd. Dr. F. H. TEALE said that in the animal experiments the difference between lymphatic infection and haematogenous infection was quite definite. Mr. C. A. R. NITCH described four cases which showed that the spread of organisms was probably periureteral both up and down the lymphatics. Mr. KENNETH WALKER, in replying, said that he had tried to carry out his observations in as many fields as possible, so that he should not be tempted to lay too much stress upon any one of them. He referred at greater length to his clinical case, and gave his reasons for considering the infection to be by the lymphatic rather than by the blood route.

PHYSIOLOGICAL PRINCIPLES UNDERLYING HELIOTHERAPY.

A MEETING of the Manchester Clinical Society was held in the Physiological Theatre of the Manchester University, at which ninety-eight members were present, with Professor G. R. MURRAY, the President, in the chair, when Professor LEONARD HILL delivered an address on the physiological principles underlying light treatment and heliotherapy.

Dr. HILL pointed out the great differences in the expectation of life between rural and urban populations; for instance, 61 years at birth for females in Westmorland against 46 at Middlesbrough; similarly at age 20 Surrey County had an advantage of nine years over Oldham. Turning to occupations, and taking the clergy as the standard of low mortality, agriculturists came next, in spite of low wages and bad housing, while factory workers gave much higher figures. Environment had to do with these differences. In regard to tuberculosis, unsalted races who came in contact with the disease suffered a very much higher mortality; so did very young children. Almost all were infected in our cities, and while small doses might vaccinate and protect, large repeated infections destroyed life; young children ought to be protected from such by removal from infected parent or teacher. In the future a successful vaccine treatment might be established, or the discovery of a drug which like salvarsan would have a specific curative effect. Supposing, however, tuberculosis were prevented and bad environmental conditions continued, other diseases would take its place and keep up a high mortality; such was the evidence of historical medicine.

Environment acted through bad atmospheric conditions, neglect of rest and exercise in the open air, over-fatigue, and ill-balanced diet. As to the first there was no increase of CO_2, or deficiency of oxygen, or organic chemical poison that mattered in the air of crowded rooms. Massive infection occurred in such from carriers of catarrhal disease, and open windows or efficient fan ventilation lessened that. Dust from clothes soiled by excreta, as well as saliva spray coughed and sneezed out, spread infection. Road and trade dusts, clogging the respiratory membrane, might lessen the protective action of the secretion, lately demonstrated so strikingly by Flemming. One kind of dust was particularly noxious—namely, free silica dust breathed by miners in quartz, and by gritstone, sandstone, and granite workers. Free silica breathed continually in high proportions produced fibrosis of the lung, which in the presence of infection was followed by tuberculosis. Injected colloidal silica lessened resistance of animals to tuberculosis, and caused in them fibrosis of kidney, liver, etc. (Gye and Kettle). Organic dusts and coal dust appeared to be harmless. Coal-miners were a healthy lot; they worked often stripped to the waist, in well-ventilated places, were not crowded together, had good food and enough leisure.

Smoke pollution of the air was the result of most inefficient methods of using coal. From 75 to 95 per cent. of the thermal energy of coal was wasted; out of every three tons used in this country, if one were properly used there might be two left over for export—that is, without raising any more coal than now. Coal should be distilled, the gas used for heating, etc., the coke for raising steam and electrical power and light, and the valuable by-products saved, such as tar and ammonium sulphate. The economic loss due to smoke fog was gigantic—waste of time due to obsolete transport, waste of artificial light, of human energy in cleaning and redecorating and washing clothes, waste in destruction of buildings and vegetation. The last helped to make a deficiency of vitamins, for little or no green food could be grown in smoky courts or gardens. The poor lived on white bread, margarine, sugar, and tea—separated, artificial products deficient in salts and vitamins. Such a diet, and confine

ment in close tenements led to rickets, tuberculosis, etc. Experiment proved the dependence of rickets on those two factors. The smoke fog robbed us of sunlight and its cheering, health-giving influence, and drove people away from open-air to indoor amusements. Overclothed, in close, warm rooms, we were surrounded with a humid, tropical atmosphere, entirely different from the stimulating effect of open air, with its high evaporative power, exerted on the skin and respiratory membrane.

Air saturated at 0° C. held about 5 grams of water vapour per cubic metre, while that leaving the lungs saturated at 33.5° C. held nearly 40 grams. It was calculable that a man sleeping out of doors and taking vigorous exercise might evaporate three times more water from his lungs than a sedentary person living indoors. To make good the evaporation much more arterial blood and lymph flowed through the respiratory membrane, and kept up its immunity to infection.

The kata-thermometer, dry and wet bulb, enabled one to measure the cooling and evaporative powers on a surface, at body temperature, and to estimate the vast difference between open-air and indoor life. This instrument showed that people were commonly living and working in atmospheres with as low cooling and evaporative powers as were found out of doors in the shade in humid, tropical climates, which were admittedly enervating to white men. Many readings had been taken in the workshops of printers, boot and shoe makers, cotton weavers and spinners, and potters, and showed that readings were very frequently below the very moderate standards set up by the lecturer. It was significant that the general mortality increased with the lowness of the readings in these four trades. People, by shutting themselves up, over-clothing their bodies in their absurd fear of catching cold, lived in a humid, tropical atmosphere, and reduced their metabolism (body heat production); this reduction entailed loss of muscle tone, flabby bodily habit, depression of breathing and circulation, ill digestion and absorption of food, loss of appetite, constipation, dyspepsia, etc.

Children at Leysin under Rollier, and at the Treloar Hospital under Gauvain, were exposed, often more or less nude, to the far higher cooling and evaporative powers of open air, and to sunshine. They responded with a 50 to 100 per cent. increase of metabolism, hard muscles, improved health, and arrest of their tuberculous disease. In place of temperatures of 32° C. dry and 30.5° C. wet bulb under the clothes, between the skin and shirt, which obtained in a room, the temperatures might be 14° and 11° when bicycling on a winter day downhill. The cheek temperature in badly ventilated factories was about 34° C., while it was 30° in well-ventilated rooms, and anything down to 20° C. in cold winds out of doors. There was a close relation between cheek temperature and body heat production. How open air affected metabolism was shown by the fact that the resting metabolism of city dwelling adults—about 1,600 to 1,700 calories per diem—was raised about 35 per cent. at the east coast, and when on a holiday. Paddling about it was at the rate of about 8,000 calories per diem, swimming 12,000 to 15,000 calories, paddling along the shore, one mile in fifteen minutes, 15,000 to 16,000 calories. The stimulation of metabolism and bracing up of the muscles by cold and exercise was a large part of the good effect of such a holiday. The abundance of light from sun, sky, and sea shine also acted beneficially.

Children did better at the Treloar Hospital during summer than winter owing to the sunshine. This was not due to ultra-violet rays, for these did not penetrate more than about 0.2 mm., but the luminous rays penetrated and were absorbed by the blood in the skin, and there changed into heat rays, probably also effecting chemical changes of a nature as yet unknown. In preventing rickets exposure to sunshine made good a diet otherwise deficient—for example, so much exposure to sun was equivalent to so much phosphate in the food. Pigmentation resulted as a sign of such changes in the skin, and, once set up, protected from sunburn. Patients had to be exposed to the sun gradually so as not to be damaged by sunburn, and a high cooling power was required to prevent overheating of the body and stimulate metabolism during the sun exposure. Given such cooling power, exposure of the body to the sun was of advantage to phthisis as well as surgical tuberculosis. Resort to the Alpine winter climate (such as that of Montana, studied by the lecturer), with its cold, dry air and warm sunshine, enabled such treatment to be continued during the worst months of the English winter.

A number of lantern slides were shown of the treatment carried out at the Treloar Hospital by Gauvain, and at Leysin by Rollier. The successful treatment of the wounded and febrile and of neurotic and insane patients by open air was also commented on, and the extension of such treatment generally urged.

TREATMENT OF FINGER INJURIES.

AT a meeting of the Manchester Medical Society, held on March 22nd, with Sir WILLIAM MILLIGAN, the President, in the chair, Mr. R. R. KERR read a communication on "The operative treatment of injuries to the fingers." He urged the importance of simple prophylaxis of sepsis in workshops. Where, however, the lesion had become septic and involved the pulp and the end of the phalanx, the incision should never be made in the centre of the pulp down to the bone, but at one or even both sides, just behind the nail. By this means the pus might be evacuated, involved bone dealt with, and the very valuable pulp saved. To splint a badly injured finger was hardly ever justifiable. If splints were used and the digit became stiff, it was in the extended position, and the owner of it was in a parlous condition. It was far better to let the injured finger heal and become stiff (if that could not be helped) in a position of rest, the semi-flexed position, which was that of greatest usefulness. A further point was that if a finger were so damaged that its function could not be restored, it should be amputated at once. With regard to amputation the principle of saving as much as possible was very dangerous. The guiding finger and by far the most important was the index. When the terminal phalanx of this digit was lost, but the stump well covered and the other joints mobile, it could still do most of its work; but if the remnant were stiff and only including the proximal phalanx or the metacarpal bone it could not do the work of the index, and no other finger could because of the jutting-out and awkward stump. If, however, the index were now amputated right to the base of the metacarpal bone and the tendons also cut well back, the thumb and the middle finger rapidly closed in, and the middle finger could easily be taught to do the work of the lost index. The same point held with regard to the other fingers. After removal of the metacarpal the other fingers closed in and full function was restored for practical purposes.

Operation for Osteo-arthritis of Hip.

Mr. H. PLATT followed with a communication on the operative treatment of osteo-arthritis of the hip-joint. He discussed the various operative measures applicable in the treatment of monarticular osteo-arthritis of the hip-joint. He pointed out that although this affection was most frequently encountered in middle-aged individuals, it was by no means limited to this age period. In his experience three broad clinical types could be distinguished: (1) infective, (2) traumatic, and (3) secondary, where the active arthritic process was superimposed on a hip-joint which in early life had been the seat of a deformed process such as pseudo-coxalgia or arthritis deformans juvenilis. In the symptomatology of osteo-arthritis of the hip, the early stage with its characteristic severe sciatic pain, and the later stages with the progressively increasing fixation of the joint, were briefly described. Although correct mechanical treatment in the early stages would be likely to render unnecessary any major operative procedure later, yet in the practical handling of this condition the surgeon was too often confronted with the fully matured arthritis and its consequent serious disablement. Four classes of operative procedure were considered: (1) Manipulation under anaesthesia—suitable for picked cases with arthritic changes of a moderate degree. (2) Removal of osteophytic deposits—the operations in this class had a limited application, inasmuch as such bony deposits were rarely the prime cause of the pain or limitation of mobility. (3) Arthrodesis—surgical fixation of the painful hip-joint was ideal in theory but difficult to achieve, and constituted an operation accompanied by a good deal of shock. For this reason, and owing to the necessity of prolonged fixation and protection from weight-bearing, the operation was suitable only for younger individuals. (4) Excision of the head of the femur. The value of this operation was emphasized, and in particular its suitability for older patients; the operation as performed by the reader of the paper was reconstructive in type. A detailed account of the technical steps involved in its performance was given.

Mr. G. JEFFERSON read a paper on the operative treatment of depressed fractures in infants and children. He urged that the old practice of leaving this condition to nature was

wrong. It was often impossible to tell in a child what was the condition of the brain under the fracture. Operation should always be carried out, and consisted in either elevating the depressed area through a small opening, or where this was not possible in excising the portion of skull affected and placing it back in the reversed position.

Mr. ARNOLD JONES made a communication on nasal obstruction in infants during the first year of life. He pointed out that the common causes of this condition were: (*a*) Congenital occlusion of the nostrils; (*b*) the temporary presence of mucus secretion in the nose and engorgement of the nasal mucosa during the first few days of life; (*c*) congenital syphilis; (*d*) mongolism; and (*e*) adenoids—the commonest. The symptoms usually seen were: (*a*) inability to suckle efficiently; (*b*) snoring and suffocation attacks; (*c*) persistent cough; (*d*) nasal discharge; and (*e*) convulsions.

The diagnosis of nasal obstruction was made from the presence of these symptoms. As to the differential diagnosis, congenital occlusion of the nostrils was very rare. A probe would reveal the situation and completeness of the obstructing web. The temporary engorgement of the nasal mucosa was at once relieved by a weak adrenaline spray. Congenital syphilis usually presented constitutional symptoms, the Wassermann reaction being positive. A mongol was recognized by its typical appearance, and adenoids were diagnosed by excluding the other causes. The treatment varies with the cause. In the case of adenoids—by far the commonest cause—surgical removal was simple, efficient, free from risk, and gave excellent results. Of 58 cases operated on from February, 1919, to the end of 1921, 23 had been recently investigated, and the results found to be excellent. No anaesthetic was used. The youngest infant operated on was under one month old.

DERMATITIS EXFOLIATIVA.

A MEETING of the Liverpool Medical Institution was held on March 23rd, with the President, Dr. J. HILL ABRAM, in the chair, when Dr. FRANK H. BARENDT related details of a case of dermatitis exfoliativa in a patient (a man, aged 30) who suffered from psoriasis since he was eight years old, and acquired syphilis three and a half years ago. He was free from any outward manifestation of syphilis, his Wassermann test was "slightly positive," but he had psoriatic efflorescences in the scalp and in the right flank. He was treated intravenously with a single dose of 0.9 gram neo-kharsivan, and locally unguentum chrysarobini was energetically applied. One week later the whole of the integument reddened and the epidermis fissuring in all directions was completely shed. At the end of three weeks the clinical picture of pityriasis rubra was displayed. Under oily lotions the skin gradually resumed its natural colour, and at the end of a month desquamation ended. There was no gastro-intestinal disturbance, the urine was free from albumin and sugar, and although he suffered great discomfort and slight fever during its evolution he was never seriously ill. The question of the immediate cause of the skin affection was viewed from several points, and Dr. Barendt could not definitely ascribe its appearance solely to the arsenical preparation. He inclined to the view that it was a case of inveterate psoriasis passing into pityriasis rubra. The patient was now well and free from any skin affection, in which condition he never remembered to have been since early childhood.

Fibrillation and Flutter.

Dr. HARRIS read a short paper on the circus movement in fibrillation and flutter. He pointed out at the outset that the exact method used in physical science was often unsuitable for research in pathological biology since the latter was too complicated and too many sided to find a true expression in a simple formula. He regretted that the problem had been approached from the electrical and not the clinical and pathological point of view. According to the theory the factors which gave rise to flutter and fibrillation disappeared as soon as the abnormal rhythm was established. Flutter and fibrillation might last for years. Just because many years ago a certain part of the auricle showed for a moment a somewhat longer refractory period than other parts, the circus movement came into existence. Once it came into being it continued *ad infinitum*, although the auricle was perfectly normal in every respect. The lecturer pointed out that it was not difficult to terminate such a circus movement; an extra-systole in the "mother" circus would do it. Ectopic auricular impulses ought to be common: disturbance in the conductivity, which is also frequent, ought also to have the same effect, and yet we did not hear of spontaneous cures of these conditions. Dr. Harris pointed out that whilst in the experiments it was artificial stimuli which brought about flutter and fibrillation, Sir Thomas Lewis and his co-workers did not give any information at all as to the factors which took the place of the artificial stimuli in clinical flutter and fibrillation. This, the most vital point in any theory, which had for its object the explanation of the mechanism of flutter and fibrillation, was left out of account. Dr. Harris maintained that clinical evidence pointed to the fact that fibrillation was due to a functionally or anatomically damaged auricle, and the causes which gave rise to the abnormal rhythm remained after the latter was fully established. Fibrillation in itself was of relatively little importance; what was important was the cause which gave rise to the abnormal rhythm—the damaged heart muscle. In regard to the general principle of treatment, he drew attention to the curious fact that fibrillation and angina hardly ever appeared together, although both were frequent occurrences in the senile heart, and that there were actually instances of symptoms of angina disappearing as soon as the auricle started fibrillating. The explanation was as follows: The individual beat in the senile heart was forceful, and therefore strained the heart muscle; in fibrillation the majority of the beats were feeble, and there was no such strain on the heart muscle. By abolishing the abnormal rhythm in the senile heart we might expose the patient to danger of angina. Comparison in mitral stenosis cases, with and without complication of fibrillation, did not reveal that the prognosis was strikingly influenced for the worse in cases of the former.

Quinidine in Auricular Fibrillation.

Dr. JOHN HAY read a paper on cardiac failure, with special reference to quinidine sulphate in auricular fibrillation. He emphasized the importance of recognizing in each case the underlying cause for the cardiac failure—toxaemia, hypertension, myocardial fibrosis, the onset of fibrillation of the auricle. He questioned the value of many of the so-called cardiac tonics, and pointed out that a too implicit belief in the power of these tonics to counteract cardiac failure was a distinct danger, and sometimes led to the neglect of other and valuable methods of treatment in the management of the case. He reported his experience of the use of quinidine sulphate in 15 cases, in 14 of which the patients were suffering from fibrillation of the auricle, and in one from paroxysmal tachycardia. In 12 of the fibrillating cases fibrillation was established, and of some standing; in one it was paroxysmal, and in another it developed during the course of acute pneumonia. In 6 of the 14 fibrillating cases quinidine failed either owing to intolerance of the drug or to the development of rapid heart action due to ectopic beats in the ventricle or simply a failure to respond. Of the 7 in whom fibrillation was arrested, in 3 there had been temporary relapses, in 4 the improvement had been pronounced and the cardiac reserve considerably increased. In 3 auricular flutter developed, in one of which it gave way to normal rhythm. In the 15 cases receiving quinidine there was one death. This occurred in the patient suffering from tachycardia. Death occurred suddenly and without warning twenty-four hours after the cessation of the tachycardia and after only 0.2 gram of quinidine had been taken. No autopsy was permitted. The method of administration was described and emphasis laid upon the importance of frequent repetition of the dose. The quinidine administered ranged from 2 to 3 grams daily. In the earlier cases smaller doses were given and the results were not so satisfactory. The dangers of the transition phases were discussed and indications and contraindications for treatment were considered. Quinidine sulphate appeared to be a valuable drug with limited application. Its administration necessitated careful supervision and a clear recognition of the dangers entailed. Dr. Hay said that he was indebted to Dr. Broomhead for help in collecting valuable material.

BACTERIOLOGY OF PNEUMONIA.

AT a meeting of the Pathological Section of the Liverpool Medical Institution held on March 9th, with Dr. HILL ABRAM, President, in the chair, Professor ERNEST GLYNN and Miss L. DIGBY, assisted by Dr. WALLACE JONES, summarized certain of their investigations for the Medical Research Council on 140 cases of acute lobar and bronchopneumonia.

One hundred and twenty-seven cases were classified as pneumococcal and 13 as non-pneumococcal, for in the latter pneumococci were absent in the sputum, examined both by

cultures and by mouse inoculation. Using the Rockefeller technique for typing the pneumococci cross agglutination was exceedingly rare; some of the "pneumococci," however, were only partially bile soluble and of diminished virulence to mice. The percentage of Types I, II, III, and Group IV, in 96 adult lobar pneumonias was 45.8, 24, 2.1, 28.1—the Americans find about 12 per cent. of Type III. The mortality was 34.1, 36.3, 50, and 11.1 per cent.—the Rockefeller mortality for Type I is about 10 per cent., partly due to the use of serum. In 21 adult bronchopneumonias 76 per cent. were Group IV and none Type III. In children collected statistics showed that the percentage of pneumococcus types in lobar pneumonia was similar to that in adults, but the mortality was lower; while in bronchopneumonia 60 per cent. were Group IV, and the mortality 41 per cent. In 7.8 per cent. of the 127 cases two types of pneumococci were found, usually I and IV; the mortality of these was 40 per cent., compared with 27.5 per cent. for all pneumonias. Pneumococci were cultured from the blood in 22.6 per cent. of 31 cases examined, the mortality of these was 71.4 per cent., compared with 8.3 for the "negatives." Lung punctures were very useful, especially in children, and produced no ill effects; in adults pneumococci were cultured from the lung juice in 45.9 per cent. of 37 pneumococcal pneumonias examined; the mortality of these was 47.1 per cent., compared with 10 per cent. for the "negatives." Though streptococci were cultured from the sputum of the adults very frequently and "influenza" bacilli sometimes, the former were only cultured from the corresponding lung juice once and the latter never. In children 66.6 per cent. of the lung-juice cultures were positive; meningococcus Type II was found once, *B. influenzae* twice, and streptococci once. Of the 13 non-pneumococcal pneumonias, 11 were classed as mainly streptococcal, though mixed infections were common. The percentage "case incidence" in sputum cultures of bacteria in pneumococcal pneumonia and normal saliva respectively were: pneumococcus, 86 and 40, the latter all Group IV; streptococcus, 79 and 100; staphylococci, etc., 54 and 28; Gram-negative cocci, 40 and 80; lactose "fermenters," 25 and 6; non-lactose "fermenters," 15 and 1. As the patients recovered the bacteria in their sputa increasingly resembled those in normal saliva. The bacteria in the sputa of the "deaths" from pneumococcal pneumonia were compared with those of the "recoveries"; in the former there was a higher percentage of pneumococci, *St. aureus*, *M. catarrhalis*, and of lactose and non-lactose fermenting bacilli, but a smaller percentage of streptococci and of most Gram-negative and Gram-positive "staphylococci." It was doubtful whether a true *B. pneumoniae* Friedländer was isolated from the pneumonias; the literature regarding the identity of this organism is confusing, and named strains were found to differ, culturally and serologically. *B. influenzae* was found in 18 per cent. of 51 pneumococcal pneumonias; the mortality of these "positives" was 27 per cent., compared with 19 per cent. for the "negatives." The relative incidence of *B. influenzae*, during seven months, in the respiratory tract roughly corresponded with the death rate from influenza in Liverpool. Of 44 empyemas in young children 68.1 per cent. were pneumococcal (Group IV comprised 56 per cent. and Type I 40 per cent.), 31.9 per cent. were streptococcal, or streptococcal and staphylococcal.

Contrary to the usual statements, the mortality of pneumococcal infections was the higher—namely, 45 per cent. compared with 21 cent. for the non-pneumococcal infections. This difference, however, was partly explained by the lower age of the children with pneumococcal infection. Group IV pneumococcus was much the commonest type found in pneumococcal infections of the respiratory tract other than pneumonia and empyema, also in non-respiratory infections. Definite clinical differences were discovered between Type I and Group IV pneumococcal infections in adult lobar pneumonias and of empyemas of children. Six cases of Type I pneumonia were treated with intravenous injections of Type I serum, 2 apparently with great benefit. The results of the bacteriological investigation of acute lobar pneumonia suggest that though streptococci, *B. influenzae*, and other pathogenic organisms are often present in the sputum, they rarely infect the lung alveoli, but are confined to the bronchioles or perhaps only to the bronchi. This was satisfactory from the point of view of treatment with Type I antipneumococcic serum, especially as one-third of the lobar pneumonia cases in Great Britain are due to Type I pneumococcus.

ACUTE TORSION OF THE UTERUS.

THE third ordinary meeting of the Midland Obstetrical and Gynaecological Society was held at the Medical Institute, Birmingham, on March 9th, with the President, Professor EWEN MACLEAN, in the chair.

Mr. BECKWITH WHITEHOUSE read a short communication on a case of acute torsion of the uterus. The patient, a nullipara aged 40, had been advised to have hysterectomy done for fibroids eight years previously, but had refused operative treatment. She was seized with acute pain and vomiting, and became collapsed, with signs of internal haemorrhage. A tumour could be felt rising to the umbilicus, and there was free fluid present. On opening the abdomen the peritoneum was found to be full of blood, and a large solid tumour, purple in colour, was bleeding from a dilated vein on its surface. On delivery this tumour was found to be the corpus uteri, greatly enlarged by an interstitial fibroid, and having undergone torsion through one complete twist at the level of the internal os. Supravaginal hysterectomy was followed by uneventful convalescence. Mr. Whitehouse pointed out that whereas most cases of torsion of the uterus occurred in old patients with tissues softened by senile atrophy, the present case was one of a woman of 40, the tissues of the uterus being firm and healthy.

Dr. C. D. LOCHRANE showed a specimen of sarcoma of the uterus and ovary from a woman of 41. A fibroid polypus had been removed from this patient twenty months previously, and a similar polypus at a later date. The uterus and both ovaries formed the specimen; the uterus was enlarged to the size of a four months' pregnancy by a soft submucous tumour, and the left ovary was much enlarged, whilst the right ovary appeared normal. The pathological report on the specimen stated that it was a spindle-celled sarcoma, probably of ovarian origin.

Mr. CHRISTOPHER MARTIN also showed a specimen of sarcoma of the uterus from a patient of 66. When first seen the uterus was the size of a three months' pregnancy, with a soft mass protruding through the cervix. This was removed, and on examination proved to be a spindle-celled sarcoma, and total hysterectomy was performed. The uterus was filled with a soft growth springing from the left wall, but showing very little sign of necrosis or of infiltration of the underlying uterine muscle. Mr. Martin pointed out that there were clinically two types of sarcoma of the uterus—that arising in the deeper layers of the endometrium and invading the myometrium very slowly, and that which occurred as a sarcomatous degeneration in a myoma and which by rapid invasion of the peritoneum led to a far graver prognosis.

Dr. C. E. PURSLOW showed a specimen of necrotic submucous fibroid removed by abdominal hysterectomy. When first seen, the uterus was enlarged to the size of a four months' pregnancy, and a necrotic mass occupied a dilated cervical canal. This was removed, but rapid recurrence of haemorrhage revealed a similar condition in the cervical canal a few weeks later. The mass was again removed, the cervix and vagina cleaned, and then abdominal hysterectomy performed. Dr. Purslow asked for comments on the procedure and technique to be adopted in such cases. The specimen excited considerable interest. It was thought by Mr. WHITEHOUSE and Mr. FURNEAUX JORDAN to look like a sarcoma, and was referred to the Pathological Subcommittee. Mr. Whitehouse thought that in these cases, after removal of the necrotic fibroid, the uterine cavity should be cleansed by packing with eusol solution for some days before proceeding to hysterectomy.

Dr. LOCHRANE also showed a specimen of primary carcinoma of the appendix removed from a woman aged 25 as a "chronic appendix, possibly tuberculous." The pathological report stated it to be a columnar-celled carcinoma. Three months later the abdomen was opened with the intention of resecting the portion of bowel involved, but no signs of recurrence being present the operation was not proceeded with.

Dr. LOCHRANE showed skiagrams of a ureteric calculus, and a curiously barbed calculus. There had been no haematuria during a history of renal colic extending over eight years, and the ureteral catheter had been passed up to the renal pelvis with ease, presumably passing between two of the spurs on the calculus.

THE Third Congress on Diseases of the Alimentary Canal will be held on April 28th and 29th at Homburg. Cholelithiasis and the relations between disturbances of the circulatory and digestive systems will be the principal subjects discussed.

THE Japanese Ambassador at Vienna has presented a sum of 6,500,000 crowns to Vienna University as a personal donation to relieve the financial straits of the University, and, it is stated, as a tribute to the scientific work that is being done there in spite of unfavourable circumstances.

Reviews.

THE FORM AND FUNCTIONS OF THE CENTRAL NERVOUS SYSTEM.

IT is difficult to write of the anatomy of the nervous system without close reference to its functions. Professor TILNEY and Dr. RILEY have carried the concept of the interdependence of anatomy and physiology to its logical conclusion in their new work, *The Form and Functions of the Central Nervous System*.[1] The basis of the book is essentially anatomical, as one would expect from the previous records of its writers and its sponsorship by Professor GEORGE HUNTINGTON. This attitude is more in keeping with the British school of neurology than is much American writing, which has latterly tended more and more towards the analysis of function alone. Perhaps a greater preoccupation with the essential structure and fundamental workings of the central nervous system might have acted as a healthy check or corrective on much speculative work. It is a pleasure, then, to have to deal with so substantial a work as this. And substantial it is, for it contains upwards of one thousand royal octavo pages. The design is bold, the plan excellent, and the execution creditable. As a matter of fact the authors have set themselves so huge a task that the attainment of a level so uniformly high is remarkable. Few signs of weariness are manifested, although the labour of writing a book which begins with the minute structure of the various types of nerve cell, embraces the anatomy and functions of the spinal cord and ascending levels, to finish with speculations on the functions of the frontal lobes, must have been enormous.

That a physiological process must have an anatomical basis is a self-evident truth, and that alterations in, and expansions of, function must be accompanied by changes in anatomical structure and connexion is also true. The need for changing plans and patterns to meet changing functions is well illustrated by the authors, and their remarks on comparative physiology in their explanations of comparative anatomy are not the least interesting feature of the book. He would be rash who would say that these speculations are always right, yet we owe the authors a debt for having stated a case, if for no other purpose than that later investigators should have something positive with which to disagree.

It is implied that this work is intended to be a textbook of the structure of the nervous system and its actual application to clinical medicine; so far as the need for such a guide is felt by medical students, this certainly is not the book for them. It is far too large for their purposes, but for reference it will be valuable, and it is in this that its importance lies. The more detailed study of the essential structure and plan of the central nervous system is a crying need of to-day. If every person engaged in the study of the psychical faculties and of behaviour could be compelled to learn the anatomy and fundamental functions of the central nervous system on some such scale and plan as is set out here, more sober work would result. Sobriety is, indeed, the watchword of this book.

The sections on the spinal cord and medulla are particularly well done. The spinal segments are illustrated in an original manner, Dejerine's distribution being followed. The syndromes of the spinal cord are well illustrated—sometimes necessarily by rare cases, such as primary lateral sclerosis. In the chapters on the cerebellum the authors express a strong opinion in favour of the theory of localization of function. They perform a service by printing the schemata of Elliot Smith, Bolk, and Van Rijnberk of the subdivisions of the mammalian cerebellum. These are thus easily compared with one another and with Mills and Weisenberg's diagrams of function in the human cerebellum. We should have expected fuller reference to Bárány's work in a book of this size. However, the index or pointing test is described, and a synopsis given of his deductions on the cerebellar areas associated with various muscular actions. The views of Tilney and Lambert on the synergic unit are stated at some length, but the addition of some tracings and photographs would have considerably strengthened the case for them. After the detailed discussion on localization we turn to the chapter on the cerebellar syndrome with great interest, hoping to find some illuminating histories of cases. We receive not bread but a stone. The syndrome of cerebellar agenesis of Nonne is fobbed off on us, and we feel a little aggrieved.

It is impossible to do justice or even to refer to all the sections in so monumental a work, but we may remark that what the authors have to say on the pituitary syndrome is disappointing, and a not entirely convincing pineal syndrome is sketched. The various clinical pictures believed to be associated with disease of the thalamus and basal ganglia are stated, and the anatomy of these regions is well described. In relating the methods by which our knowledge of cerebral localization has been attained no mention is made of Elliot Smith's procedure, and Campbell's diagram is preferred to his and to that of Brodmann. It is curious also to see Campbell's figure of functional localization in the motor area chosen instead of the later figures of Sherrington. We do not object to Campbell's figures nor belittle their value; still, in a book where space has hardly been a consideration, it would have been well to have shown those of others as well.

It will readily be realized that the authors have attempted a herculean task. To keep a balance between minute structure, embryology, anatomical connexions, physiological significance, and the syndromes of disease is an undertaking of the most difficult order. The failures of the book are undoubtedly due to the overstressing, the overaccentuation, of one part at the expense of the rest. These faults are particularly obvious in the chapters on the hemispheres. An opportunity for a majestic survey of the gathering together and final elaboration of all the work done by the lower levels is here afforded, but the result is meagre.

We would not leave the book thus in what might seem an unfriendly spirit. For whilst we have dwelt upon some deficiencies we are not unmindful of the excellence of many parts. Those who work on the anatomy and the functions of the nervous system, those who study its diseases, are unquestionably debtors to Professor Tilney and Dr. Riley for their great labours, and will feel no little gratitude for the courageous way in which they have grappled with their huge task.

[1] *The Form and Functions of the Central Nervous System.* By F. Tilney, M.D., Ph.D., and H. A. Riley, A.M., M.D. Foreword by George S. Huntington, Sc.D., M.D. London: H. K. Lewis and Co., Ltd. 1921. (Roy. 8vo, pp. 1020; 763 figures. 70s. net.)

DERMATOLOGY.

Two well-known textbooks of dermatology have recently registered new editions: that of Stelwagon has now attained its ninth, while that of Norman Walker has reached its seventh. The appearance of the new STELWAGON[2] reminds us of the loss dermatology sustained by the death of its talented author; he died suddenly of angina pectoris while he was beginning to make preparations for the production of the present volume. The burden was ably taken up by his friend and colleague H. K. GASKILL, to whom we owe the successful completion of an onerous task. He has not materially changed the plan of this, one might almost say, classical work, but he has eliminated some of the older and superseded matter to make room for more recent investigations, and he has fully maintained one of the features which have always made this textbook so valuable—namely, the meticulous fullness and exactitude of the references. It is almost appalling to think of the amount of labour that has been so ungrudgingly spent on the collection and collation of dermatological literature for inclusion either in the main body of the text or in the voluminous footnotes which are to be found on wellnigh every page. The new Stelwagon is not so much a textbook as a dictionary of dermatology—a dictionary, moreover, in which, so far as a mere reviewer can ascertain, no entry of any importance is omitted. For specialists and for those who are already familiar with the elements of the subject this is an invaluable volume, and one which they should make a point of possessing. For students its value is not so certain; the presentation of the subject with such amplitude and elaboration might be calculated to discourage the youthful seeker after knowledge, and he might be overcome by the complexity of the pictures displayed to him. He should try something easier first, and will turn later on to the stronger meat of Stelwagon with an appetite that will assuredly be satisfied. As regards the get-up of the volume we have little but praise. The printing is good; there are no obvious typographical errors. It is well and copiously illustrated, principally by photographs, and in some cases by diagrams; a few of the plates are in colour. As ever, the

[2] *A Treatise on Diseases of the Skin for Advanced Students and Practitioners.* By H. W. Stelwagon, M.D., Ph.D., and H. K. Gaskill, M.D. Ninth edition. Philadelphia and London: W. B. Saunders Company. 1921. (Roy. 8vo, pp. 1313; 401 figures, 29 plates. £2 10s.)

coloured illustrations are at once the attraction and the disappointment of books on skin diseases. The medical public *will* have them, but they are seldom satisfactory. They are not very good even in the present instance. Finally, we may add that, considering its size, the number and excellence of the illustrations (even including the coloured ones), the binding and general format, this book, judged by modern standards, is cheap at its price.

Dr. NORMAN WALKER'S *Introduction to Dermatology*[3] affords a striking contrast to Stelwagon's treatise. Founded, as the author states, on his own lectures, it is essentially a book for students. It is clear, precise, and definite, not overloaded with detail, and although it has grown quite a lot during its progress through successive editions it still remains only about one-third of the size of Stelwagon. In stating that it is essentially a book for students we do not mean to discourage more advanced readers. Practitioners and specialists will alike find much to interest and stimulate them within its covers. It is an expression of Dr. Norman Walker's very energetic and distinctive personality, and is written with attractive raciness of language. Sometimes, indeed, he finds the English inadequate for his needs and is compelled to relapse into Scottish, as in the use of the word "kenspeckle," which, however, in a footnote he is good enough to explain means "having so singular an appearance as to be easily recognized." As would be expected in a work possessing these characteristics the allotment of space among the various divisions of the subject seems sometimes rather capricious. The most interesting and fullest chapter is that devoted to dermatitis of various causes, especially "dermatitis venenata" and "autophytica," subjects that have always attracted the author's attention in a high degree, and on which he has written in our columns. On the other hand, his description of the rashes and treatment of syphilis is, one might almost say, meagre, being limited to about seven pages only. To some extent he anticipates this criticism by prefacing his remarks by the statement that "special monographs or textbooks on surgery must be consulted" for a description of the disease as a whole; but, after all, syphilis is disease which attacks the skin at some time in every case, and the diagnosis of cutaneous syphilis from other conditions is one of the commonest and most important problems that can be presented, either to the dermatologist or the general practitioner. Moreover, there is one sentence in his few remarks on the treatment of this disease that really ought not to go unchallenged. Speaking of the treatment of the primary stage, he says: "Two or three doses (of 0.5 of a gram of salvarsan or one of its substitutes) given at intervals of ten days may sometimes be all the treatment that is required." Is not this a rather dangerous doctrine for so high an authority to promulgate? On the other hand, the chapter on lupus and tuberculosis of the skin is full and good. A timely word of warning is given against the overuse of *x* rays, which are too liable to be followed by carcinoma, and the author is more in favour than most dermatologists of using old tuberculin, but in rather an unusual form—namely, as an ointment rubbed into the lesions. On the other hand, he does not believe very much in excision, although there is a growing tendency to regard this as one of the best methods of dealing with lupus when practicable. Another point whereon Dr. Norman Walker differs from many of his colleagues is as regards the contagiousness of alopecia areata. He holds that there is sufficient evidence to justify the medical officer of a boarding school in refusing to allow a case of alopecia areata to remain there while being treated, although he would not exclude a case from a day school. The book is profusely illustrated, and there are a large number of coloured plates. We gladly admit that these are more successful than usual, and in many instances give a very good idea of the clinical appearances of the diseases illustrated. The book is convenient in size, easy to handle, and attractive to read, and may confidently be recommended to students, practitioners, and dermatologists.

The appearance of the second edition of Dr. HALDIN DAVIS'S book on *Skin Diseases in General Practice*[4] is proof of its merit. The method of approaching the subject is novel, and, if Sabouraud's *Dermatologie topographique* be excepted, is probably dissimilar from that of any other textbook on dermatology. What may perhaps be termed a regional classification has been adopted—that is, the eruptions are described as they affect certain areas of the body. The value of this arrangement is evident when we remember how regularly most skin diseases select certain areas. By this regional plan the practitioner is informed what diseases may be expected to affect a certain area. Did the author limit himself to a rigid system of this sort many of the advantages would be lost, but he has been careful to complete the symptomatology and thus present a scientific and intelligent account of disease. The indications for treatment are clear and thorough, and include all methods available to a well-equipped physician. The illustrations are many, some in colour, and these add completeness to the book. Thus the second edition comes up to the high standard of the first. The author is to be congratulated upon his admirable little treatise.

The fourth edition of *Diseases of the Skin*,[5] by Dr. R. L. SUTTON, is considerably larger than its predecessors; it now contains over 1100 pages. Although some new subjects have been added, such as nocardiosis, dermatitis dysmenorrhoeica, and neurotic excoriations, the general plan remains much the same, the text having been expanded here and there and revised where necessary. The author expressly states that foreign contributions have in this edition received fuller consideration, and this is borne out by examination of the well-selected bibliographies appended to the different sections. American dermatology occupies a high position, and the book under review is a worthy representative of the scientific medicine of the author's country. It is well illustrated and produced, and conforms to the high standard of the previous editions.

ZOOLOGY FOR STUDENTS.

IT may be conceded at once that Professor J. GRAHAM KERR'S *Zoology for Medical Students*[6] is an excellent book, written in a refreshingly original manner. The first difficulty to be overcome in writing an elementary textbook of zoology is to present the phenomena of life as an orderly sequence, so that facts appear to the student's mind to be in some way related. We believe that one or two of the recent textbooks, Professor Kerr's among them, have succeeded in making an orderly presentation, and that the earlier textbooks were not so successful. Zoology, unless taught with extreme care, is apt to be regarded by first and second year students as a series of isolated facts, and to be memorized in the same way that most of us memorized our Homer. The second great difficulty is to present fact in terms of function without recourse to knowledge which is not in the possession of the elementary student. Professor Kerr has successfully surmounted these difficulties, and will hold the student's attention all the more surely because groups have been illustrated very frequently by species of economic importance. We cannot call to mind any book written from the point of view of the pure zoologist in which such up-to-date knowledge of economic problems is displayed. No really important advance in our knowledge of the protozoa, worms, and insects harmful to man has been omitted; organisms which destroy crops and garden produce are not so generally mentioned.

Professor Kerr's facts, then, are well selected and well presented. We wish we could approve the general plan of his book. We understand from the preface that it represents lectures in zoology delivered to first-year medical students of Glasgow, and that the course in zoology lasts no more than ten weeks. The reviewer would have been a proud man if he had mastered the material in this book by the end of his second year. Its 475 pages of text seem to carry the reader a great deal farther than any pupil of average ability could go, and to introduce him to a vast number of types, admirably chosen we admit, which he will be unable to remember. The book contains too much, and the excess of matter is very unevenly distributed. The author is a teacher of experience, and his results are good; he has a perfect right to divide up his space as he sees fit; but we think he is mistaken in

[3] *An Introduction to Dermatology.* By Norman Walker, LL.D., M.D., F.R.C.P. Seventh edition. Edinburgh: W. Green and Sons, Ltd. 1922. (Demy 8vo, pp. xviii + 356; 84 plates, 80 figures. 21s. net.)

[4] *Skin Diseases in General Practice.* By H. Davis, M.B., B.Ch., B.A.Oxon., F.R.C.S.Eng., M.R.C.P. Second edition. Oxford Medical Publications. London: H. Frowde, and Hodder and Stoughton. 1921. (Demy 8vo, pp. 357; 73 figures, 8 plates. 25s. net.)

[5] *Diseases of the Skin.* By R. L. Sutton, M.D. Fourth edition, revised and enlarged. London: H. Kimpton. 1921. (Sup. roy. 8vo, pp. 1132; 969 figures, 11 plates. 50s. net.)

[6] *Zoology for Medical Students.* By Professor J. Graham Kerr. London: Macmillan and Co. 1921. (Demy 8vo, pp. x + 485; 199 figures. 25s. net.)

devoting eleven pages to sponges, forty-five to fishes (excluding Amphioxus and the Lampreys, which are treated fully), and only twelve to the Mammalia. There is no description of the anatomy of any particular animal; and the student who has no concrete knowledge of his rabbit can scarcely appreciate the lucidity with which the general characters of the mammalia are discussed. The omission of the anatomy of some chosen type is a doubly serious loss to the medical student, because in his second year he will presumably devote two months to a human arm or leg, and to following the branches of the radial artery, but he will not have handled the mammalian heart, and he may possibly have no knowledge of any heart higher than the frog's.

We should like to see the liver fluke banished from all elementary textbooks. Its anatomy is diabolical and its importance as a parasite of man very small; it has, we admit, great historical interest. In its place we would put Opisthorchis, a widely distributed fluke, commonly found in the cat, and of some importance as a parasite of man himself. This organism has a simple anatomy and a known life-history; it appears to be an ideal fluke for the student.

The figures in Professor Kerr's book are excellent. They are all good line drawings, well conceived, but admirably simple. The index is good, and the price not exorbitant.

THE HISTORY OF ELECTROTHERAPY.

AN essay on the *History of Electrotherapy and Diagnosis*,[7] by Dr. HECTOR A. COLWELL, assistant radiologist to King's College Hospital, is a scholarly account of the development of the use of electricity as a curative agent. As the author starts with the use of medicinal springs, which are believed to derive a part of their efficacy from the presence of radio-active substances, and treatment by static electricity as obtained from a living animal—namely, the torpedo fish—it is evident that the method can be traced back to far distant times. After this somewhat remote introduction the various steps in the development of our knowledge of electricity are traced, and amongst other things it is explained that Gilbert's work, *De Magneto*, published in 1600, laid the foundation of modern conceptions of electricity, and that he was the first to use the term "electric"; that the next great step forward was the making of a primitive electrical machine by Otto von Guericke about the year 1650; and that Jallabert, Professor of Physics at Geneva, must be regarded as the first scientific electro-therapeutist, since it was in 1747 that he attempted to produce muscular contractions by electricity with a view to the exercise of individual muscles, and thus preceded Duchenne by about a century, although it is undoubted that the foundation of modern electro-therapeutics is due to the latter.

In writing this book Dr. Colwell has adopted the plan of arranging his material in the order of priority, and thus it is easy to follow step by step the developments from remote ages down to the present time. He takes each authority in due order, quotes his work, indicates its influence on future developments, and in most cases inserts illustrations of the various writers and of their apparatus. It is evident that an immense amount of care and trouble has been taken to achieve completeness, and probably nowhere else could this vast amount of historical information be so easily obtained. The illustrations are a prominent feature, and all are of excellent technical quality. They consist mainly of portraits of the famous men of the past who have by their discoveries advanced electrical knowledge, and of plates showing the somewhat primitive electrical apparatus used by them in making these discoveries. The author can be congratulated on having written a book of absorbing interest, which is at once a valuable historical record and a book of reference, which should find a place on the shelves of all those who are interested in his subject.

THE TRIAL OF STEINIE MORRISON.

IN our issue of September 17th, 1921, page 447, we reviewed Mr. Roughead's book on the trial of Burke and Hare. The extraordinary crimes with which those criminals were charged were of considerable medical interest. Another volume of the same series of *Notable British Trials*[8] is now before us, dealing with the trial of Steinie Morrison for the brutal murder of Leon Beron in 1911. Although no important question of forensic medicine arose, and such medical evidence as was given had little influence on the result, this trial cannot fail to be of interest, not only on account of the mystery surrounding it, but still more because of the strange world of Jewish aliens in which the victim and the accused, and so many of the witnesses in the case, were shown to have lived.

The murder took place on Clapham Common, but the other scenes of the drama were enacted in Whitechapel in the modern ghetto, close to what was formerly called Petticoat Lane. The public at this time was more than usually interested in foreign Jews and anarchists on account of the recent murders of policemen in Houndsditch, and the Sidney Street siege, which had taken place just before this trial, and in the neighbourhood where nearly all the dramatis personae lived.

The victim was considered a capitalist. He wore a valuable gold watch and chain; but his income (derived from house rents) did not exceed ten shillings a week, and for the five years he had been in England he seems to have lived a life of complete idleness, spending most of his days from breakfast to closing time in a small Jewish coffee house, where his expenditure averaged not more than fifteen pence a day. The accused was a Russian Jew, a man of fine physique, and a convict on ticket-of-leave, who had more than once been convicted of burglary. He claimed to make a living by selling cheap jewellery, but there was no foundation for the claim except his own statement, and he failed to account satisfactorily for the money which was in his possession after the murder.

The alien witnesses—some of whom knew little or no English—appeared one and all to have very rudimentary ideas of truth, so that, as Mr. FLETCHER MOULTON, the editor of the book before us, remarks, it seemed that the court, on the Indian precedent, "should approach all evidence in a spirit that if verbal it is perjured, and if written forged, but above all should avoid being prejudiced against the merits of a party's case merely because that case is supported by false evidence." Most of the witnesses appeared to have had small visible means of subsistence. One of them described himself as "a gentleman of independent means," but those means were shown to be about fifteen shillings a week, and Rowton House was his place of residence.

The case for the Crown rested largely on the evidence of identification given by three cabmen who were alleged to have driven the prisoner to and from Clapham Common. Such evidence seems to us, as it probably did to the judge, of very doubtful value, when we consider that the witnesses only saw the man at night, for a very few minutes, and in no circumstances which would tend to direct particular attention to him, and, moreover, that his likeness had appeared in the daily papers before the identification took place.

Whether Steinie Morrison was guilty or not, it remains a mystery how the humdrum middle-aged Leon Beron was induced to take a long cab drive from Whitechapel to Clapham Common in the small hours of New Year's morning. The marks on the cheeks of the dead man and the recent events in the East End suggested to many people that the crime was political. There was, however, no evidence that Beron or Morrison had anything to do with any secret society or plot, and probably the murderer made these cuts or scratches with the intent to put the police on a false scent.

Mr. Justice Darling presided at the trial with conspicuous ability and fairness. In his summing up he almost suggested that, had it been permissible, a verdict of "Not proven" would have been appropriate. The jury, however, found the prisoner guilty of wilful murder. The conviction was upheld by the Court of Criminal Appeal. The Home Secretary at the time was that "man so various" (*testé* Lord Robert Cecil), Mr. Winston Churchill. One of his various selves had lately astonished and amused the civilized world by attempting to arrest two alien criminals in an East End slum with the help of two Horse Artillery guns and a company of Foot Guards. A more prosaic and common-sense compartment of his brain decided to commute the death sentence on Morrison to penal servitude for life. Considering all the circumstances, we cannot but approve of his action. During the ten years to which Morrison's life sentence extended he was troublesome and refractory; he starved himself for long periods, and died last year, probably weakened by his fasts, protesting his innocence to the last.

[7] *An Essay on the History of Electrotherapy and Diagnosis.* By Hector A. Colwell, M.B., L.R.C.P., M.R.C.S., D.P.H. London: William Heinemann (Medical Books), Ltd. 1922. (Demy 8vo, pp. xiii+180; 115 illustrations. 17s. 6d. net.)

[8] *The Trial of Steinie Morrison.* Edited by H. Fletcher Moulton, B.A. Cantab., of the Middle Temple, Barrister-at-law. Notable British Trials Series. London and Edinburgh: William Hodge and Co., Ltd. 1922. (Demy 8vo, pp. 282; 10 illustrations. 10s. 6d. net.)

NOTES ON BOOKS.

WE mentioned some time ago the *Quarterly Cumulative Index to Current Medical Literature*, founded upon the lists published in the *Journal of the American Medical Association*. It will be remembered that the April number of each year indexes journals issued in the first quarter of the year; the July number supplements this by indexes to journals published during the second quarter, and so on. We have now received the volume for the year 1921. It contains lists of new books; in one they are given under the names of the authors, alphabetically arranged; in the other they are classified according to subjects. This last is a very useful feature. There is also a list of documents issued by the Government of the United States.

The second edition of Professor ERBEN's textbook on the diagnosis of simulation of nervous symptoms[9] gives an account of the thousand and one aches, pains, disabilities, paralyses, and so forth that are put forward by the malingerer, and describes the lines on which a true diagnosis is to be reached without doing possible injustice to the patient owing to failure to detect the presence of organic diseases that may produce very similar symptoms. The subject-matter is well arranged and indexed; there appears to be no mention in the book of the simulation of blindness or deafness.

The second edition of the *Treatise on Fractures*,[10] by J. B. ROBERTS and J. A. KELLY, is somewhat enlarged by the introduction of additional illustrations and by the more detailed consideration of fractures in military and industrial practice. By the judicious use of radiographs and diagrams the authors have succeeded in giving in a most vivid manner a representation not only of the various forms of displacement met with in fractures, but also of the various methods by which fractures may be reduced and kept in good position. It is perhaps not too much to say that the book is one of the best textbooks on the subject, and should prove of the greatest use to the student and general practitioner.

[9] *Diagnose der Simulation nervöser Symptome auf Grund einer differentialdiagnostischen Bearbeitung der einzelnen Phänomene.* Von Prof. Dr. S. Erben. Zweite, vielfach ergänzte und erweiterte Auflage. Berlin and Vienna: Urban and Schwarzenberg. (Sup. roy. 8vo, pp. 270; 3 plates, 25 figures. M.56; bound, M.76.)

[10] *Treatise on Fractures.* By J. B. Roberts, A.M., M.D., F.A.C.S., and J. A. Kelly, A.M., M.D. Philadelphia and London: J. B. Lippincott Company. 1921. (Medium 8vo, pp. 755; 1081 illustrations. 42s. net.)

TEETH, HEALTH, AND THE HOME.

USING figures of a report made in 1912 by a school medical officer to his county council, Mr. E. C. Rhodes has endeavoured to assess statistically the relation between teeth and health in children. His methods are described and his results are detailed in a report published from the Galton Laboratory.* Professor Karl Pearson in a preface tells us that observations designed to secure better data are in progress, but that meanwhile the purpose of this first paper will have been fulfilled if it demonstrates that there is a wide field for valuable co-operation between an institute such as the Galton Laboratory and public bodies making a necessarily rapid survey of their child population but having little leisure for research.

That there is this wide field and the possibility of valuable co-operation is abundantly evident both from the nature of the questions raised and from the masterly manner in which Mr. Rhodes has dealt with figures that at first sight seemed to offer insuperable discrepancies. The observations of five different doctors had to be investigated, and it was found that their standards differed too much to render it possible to reduce them all to a common standard. Two pairs could so be reduced, and the means by which this was done afford a striking example of good statistical work and of impartiality in handling figures. As the large differences of standard between some of the doctors made the effective treatment of the whole material on a common basis impossible, the results were less reliable than they would otherwise have been, and the author seems fain to regard his work rather as showing what may be done by statistical methods, and the faults of the usual methods of collecting data, than as affording definite conclusions.

Mr. Rhodes has correlated the condition of the teeth with weight, nutrition, anaemia, condition of nose and throat, as factors giving an indication of the child's health; and with cleanliness of body and father's employment as factors giving an indication of home conditions. The figures were drawn from reports on boys and girls from 12 to 14 years of age, and the conclusion reached is that, on the whole, there is nowhere any very high degree of correlation between bad teeth and any other character examined. The author realizes that the data collected by the medical inspectors were not collected with a view to statistical inquiry, but pleads—and we heartily support him—that if they were their value from the standpoint of social hygiene would be raised out of all proportion to the greater trouble involved. Observers should work to a national standard—a point to which Mr. Rhodes suggests the Ministry of Health might well give its serious attention. Probably the setting up of such a standard will not be easy. We think, indeed, that Mr. Rhodes himself is at fault in his estimate of when a tooth is carious. He says (p. 42): "It is generally understood that before caries in a tooth can set in a preliminary rotting of the tooth must have followed the chemical changes which take place in the remnants of food lodged in the interstices and crevices of the tooth." By "preliminary rotting" we imagine he means rotting of the enamel, reserving the term "caries" for destruction of the dentine. To the dentist rotting of the enamel is caries as much as rotting of the dentine; and if the dentist's standard were adopted clinical experience suggests that so large a number of carious teeth would be found in all sorts and conditions of children that healthy and unhealthy would be judged equally carious. If, however, note were taken only of the second and third stages of decay—that is, caries of the dentine—abscess being of frequent occurrence in the third stage, then the clinician will be disposed to believe that a definite relation between caries and states of ill health (anaemia, loss of weight, malnutrition) would be found. It may also be suggested that since treatment of the teeth of school children resolves itself largely (and rightly so) into extraction, some account should be taken of teeth extracted for caries, or at least of those recently removed.

Viewing the matter from another standpoint—the influence of heredity—Mr. Rhodes suggests that it would be of interest to find out whether any association exists between the state of the parents' teeth and those of the children. His work shows that the degrees of association between the state as to caries of the teeth in children of 12 to 14 and their general health and home environment are but slight, being about 0.1 in the scale of the correlation coefficient, while the relationship between parent and child for many physical characters is 0.5. If, then, the dental association were found to be about 0.5, heredity might be claimed as an important factor in the occurrence of dental caries.

Mr. Rhodes also examined the association of weight with father's employment, of nutrition with weight, and of nutrition with anaemia. Of these, nutrition and weight are the only pair of factors discovered in the whole investigation that yield a high correlation coefficient, but he notes that the medical judgement of nutrition may itself have been based on weight, or at least on size and plumpness. The other two show a positive sign of no great intensity.

As has been already noted, on account of insufficiency of data the results of Mr. Rhodes's work cannot be accepted as conclusive, but if it serve the purpose of drawing attention to the need and value of standardization in the method of making and recording observations, his publication of his report will have been amply justified.

* *On the Relationship of Condition of the Teeth in Children to Factors of Health and Home Environment.* By E. C. Rhodes, B.A.Cantab. London: Cambridge University Press; H. K. Lewis and Co., Ltd.; and W. Wesley and Son. 1921. (Roy. 4to, pp. viii + 80; 4 diagrams. 9s. net.)

"CINEMATOGRAPHS AND VIVISECTORS": A FLANK ATTACK.

LAST week (March 28th) the *Times* published an article in large type, headed "Cinematographs and Vivisectors: How Pain can be Saved," and also a leading article which began by the statement that "The reflective layman hesitates before the dilemma raised by painful experiments on animals." The article suggested the use of cinema films for the recording of experiments on animals, especially for teaching. "In this matter," the article said, "the average layman is not prepared to follow those ardent physiologists who claim or have claimed that even painful experiments on living animals are a legitimate part of medical training. We may agree in theory that they add to the vividness of a lecture and impress on the memory details that diagrams and verbal descriptions

leave vague. But, so far as this country is concerned, it is now generally agreed that the end does not justify the means." The implication in both articles is quite clear; it is that painful experiments are unnecessarily performed, and are performed to illustrate lectures or demonstrations to medical students. That this impression is, in fact, conveyed is fully confirmed by a letter from the Duchess of Hamilton published in the *Times* of March 30th. "To all humane people," the Duchess says, "the thought of their sons and daughters being trained by lectures given over a tortured creature must be abhorrent—the one drawback to entering that most noble of professions, the art of healing." Now the implication is not true, and the *Times* ought to have known that it was not true, since, apart from other sources of information easily available, the truth can be ascertained by a short study of the Act. The position has been well explained by Professor Starling in a letter published in the *Times* of March 31st; he has placed a copy at our disposal, and we cannot do better than reproduce it in full:

To the Editor of the "Times."

SIR,—My attention has been called to an article entitled "Cinematographs and Vivisectors" in your issue of March 28th. Either ingeniously or ingenuously your correspondent contrives to convey the totally false impression that painful experiments may be and are used for purposes of instruction, and that these form an ordinary means of research for the advancement of physiological knowledge. This untruth, generally conveyed by implication rather than by direct statement, is a stock-in-trade of the professional lecturer of the antivivisection societies. May I be allowed here to state once again what are the facts?

No painful experiment is ever performed for the purpose of teaching or demonstration. The occasions on which any infliction of physical pain is necessary in an experiment for the advancement of physiological knowledge must be very rare. Indeed, at the present time I cannot think of any case in which such a contingency could not be avoided. During the last thirty-three years I have probably performed more so-called vivisections than any physiologist in this country. Never during these years have I inflicted pain on an animal. Our whole life is devoted to the study of the working of the body in order to diminish the sum total of human and animal suffering, and we acquire thereby a horror and detestation of pain, which are perhaps exaggerated, but are more real than the horror-fed sentimentalism of the average antivivisection audience.

With regard to cinematography as a method of teaching and research, this is a subject to which I have devoted much time and attention. Though its applicability is at present extremely limited, there is no doubt that the method will be very useful for the study and analysis of certain forms of movement. But it is not suited for the study or teaching of other functions of the body in which movement does not form the essential feature, so that it can never be used to the exclusion of actual experiments. Nor is this desirable. The great object of experimental demonstration is to put the student's knowledge into three dimensions and to correct the purely verbal and two-dimensional ideas he obtains from the study of books and pictures, or even films. Who among your readers would choose to be operated on for appendicitis by a surgeon whose only acquaintance with the operation had been derived from pictures and moving films?

With part of your correspondent's last sentence I am in complete agreement—namely, that on scientific grounds there is a large field for the further employment of the cinematograph. But it is not true that humanitarian grounds are also involved; humanity demands the fullest development of the experimental method for the advantage both of man and of the lower animals. Twenty thousand dogs are killed painlessly every year in the Dogs' Home, Battersea, and no one is benefited. A few hundred are killed equally painlessly in the physiological laboratories of this country with, as a result, the remarkable advance in physiological knowledge and in the control of disease which during the last thirty years have contributed so much to the benefit of man and the alleviation of suffering.

I must apologize for troubling you with this restatement of facts which must be well known to the vast majority of your readers.—I am, Sir, your obedient servant,

E. H. STARLING.

The Institute of Physiology,
University College, Gower Street, W.C.,
March 31st, 1922.

THE HOSPITAL POLICY OF THE LABOUR PARTY.

THE Labour party has prepared and issued a statement of its policy in regard to public hospitals.* The document is a pamphlet of twenty closely printed pages, concluding with a summary, which amounts in effect to a policy set out in the following thirteen recommendations:

1. The Labour party, recognizing the importance of health to the individual and national well-being, considers that all hospitals, both general and special, together with allied institutions, should be so organized under one authority as to form the foundation of a complete hospital system for the nation with sufficient accommodation to deal with all cases requiring institutional treatment.
2. It would establish treatment centres in outlying districts, local or cottage hospitals in the smaller towns, one or more county hospitals conveniently situated in each public health area, and national hospitals in London and Edinburgh and other university towns.
3. It would organize intimate co-operation between all the hospitals in each public health area and also between them and the nearest national hospital. It would make arrangements for easy and rapid transference of patients from one hospital to another according to the nature and requirements of the case.
4. It would organize intimate co-operation between the medical staffs of the various hospitals, and also between them and general practitioners, making the participation of the latter an essential feature of the hospital scheme.
5. It would provide the Health Authority with sufficient beds under their own control to deal with all patients for whom they have already undertaken the responsibility. (Patients suffering from tuberculosis or venereal diseases, children from the school clinics, mothers and infants from the maternity and child-welfare centres, and adults from the National Health Insurance Schemes.)
6. It would introduce the necessary legislation for the transference of the Poor Law Institutions from the Guardians of the Poor to the Local Health Authorities, thus placing at their disposal many beds now vacant. It would remodel these infirmaries, where necessary, equipping and conducting them in every way on the lines of the best existing general hospitals.
7. It would give voluntary hospitals the option of being taken over by the Health Authorities entirely, or of receiving grants from public funds conditional on efficiency. The Local Health Authority should be represented on the Boards of Management, and, though remaining on an entirely voluntary basis, such hospitals should work in co-operation with the public hospital.
8. It would relieve pressure on hospital beds in the cities and towns by acquiring convalescent homes in the country, into which should be admitted cases of threatened breakdown and patients no longer requiring hospital treatment, but not sufficiently recovered to return home.
9. It would establish free dental clinics connected with all hospitals, believing that supervision and treatment of the teeth are essential to health.
10. It would also arrange a scheme for visiting nurses and home helps in connexion with the hospital system, and lays special stress on the importance of the skilled supervision and after-care of patients who have recovered or partially recovered from an illness.
11. It would make all public hospitals free and open to everyone who would be likely to derive benefit from institutional treatment.
12. While doing this it would insist on the treatment offered being equal to that of the best voluntary hospitals in efficiency.
13. It would endeavour to forestall the necessity for so many hospital beds by a forward social policy generally, and in particular by establishing a "national minimum" in health and housing by abolishing all slums and undertaking a comprehensive housing scheme.

* *The Labour Movement and the Hospital Crisis.* A statement of policy with regard to hospitals. Published by the Trades Union Congress and the Labour Party, 32, Eccleston Square, London. Price 1s.

STRINGENT regulations regarding *x*-ray laboratories have been promulgated by the New York Board of Health. No person is to operate an *x*-ray laboratory, or to advertise that an *x*-ray laboratory is conducted, without a permit issued by the Board of Health; every *x*-ray laboratory must at all times be in charge of a qualified medical practitioner or other person whose experience and qualifications are satisfactory to the Health Department. Rules are also laid down for the safety of the operators and patients.

British Medical Journal.

SATURDAY, APRIL 8TH, 1922.

THE HOSPITAL POLICY OF THE LABOUR PARTY.

THE statement on policy with regard to hospitals which the Labour party has put out will be read with interest because it emanates from one of the important political parties, although opinions will differ as to its intrinsic merits. The policy it presents to the public is embodied in thirteen propositions, which are printed in full on the preceding page (570).

To these thirteen articles the reader will react according to his political sympathies. If he has a leaning to what is known as nationalization he will consider No. 1 a reasonable ideal, and will accept all that flows therefrom. If he has no such leaning he will still accept some of that proposition, at any rate to the extent of the assertion that "there should be sufficient accommodation to deal with all cases requiring institutional treatment." Articles 2, 3, 4, 8, and 10 are common ground for all those who have considered the necessities of modern medical work; statements to much the same effect have appeared in reports of the British Medical Association, in the Dawson Report, and in others less well known. The help of the Labour party in attaining the aim set out in the second part of No. 10 would be very welcome, but has not hitherto been given in any large measure. As to No. 13, the medical profession has been for fifty years insistent that steps should be taken to abolish old slums and to prevent the formation of new slums. Some will be disposed to ask for a definition of the phrase "comprehensive housing scheme"; even a passing glance at what has been going on during the last few years suggests that we are not altogether on the right lines, that either local means of communication must be improved to a degree hardly to be hoped, or that the policy of building two-story houses must be reviewed. On the whole it may be said that a cursory examination of the thirteen propositions as they stand suggests little material for criticism of them as a statement of their views on an important problem by the Labour party's advisers in hospital matters; that they have formulated their opinions is to their credit, and we are glad to know what these are, whether we agree with them or not.

So much can be said for the summary. If that were all the document might be received with thanks as an expression of opinion. But it is much more than that, and we scarcely remember reading a paper issued by a group of public men which contained more conflicting statements than this. It bears internal evidence that it is the handiwork of medical men—among them men engaged in hospital practice; it has few marks of labour—of the toiler in the field, the street or the workshop; it seems to be, in fact, less the expression of the opinion of the Labour party than of a small group of men of our own craft who are attached to that party. It might have been expected that these men would have made a simple and balanced statement of the conditions of hospital affairs which would have really helped those who look to them for guidance. We do not find this balance. We find instead statements almost effusive in praise of voluntary hospitals mixed with observations on the working of these same institutions which are at once depreciatory and misleading. The impartial reader of the report gets the impression that its compilers, with a set doctrine before their eyes, had come to curse certain "voluntary" efforts, but, like Balaam, had been constrained to bless, even though at times the impulse to curse has triumphed.

The document begins with the statement, "At the present time, with rare exceptions, general hospitals are supported by voluntary contributions," and the term "general hospital" is used throughout as a synonym for voluntary hospital. The writers nowhere give any indication of a realization of the fact that the large institutions established as Poor Law infirmaries, which contain a greater number of beds than the voluntary hospitals, are in reality large general hospitals. To this point we shall recur when we come to the figures upon which the case for expansion is based. The remainder of the opening paragraph is a strange commentary on the chief recommendation of the report—that the one and only salvation for the hospitals of the country is State control and management—for the paragraph recites a long list of conflicting or overlapping public authorities which are at present responsible for hospitals, and indeed control a large majority of the hospital beds in the country. If the State has not contrived in all these years, with the hitherto unlimited resources at its disposal, to unify its own system of statutory hospitals, what advantage to the sick person will arise from the absorption into this welter of State hospitals of the voluntary hospitals, which are admitted in this report to attain an ideal standard of efficiency, even though "each is administered by its own committee of management" and "is a law unto itself"? No exception need be taken to the succeeding paragraph. It deals with the work of general hospitals (meaning the voluntary hospitals), and it concludes with the statement in large type: "A general hospital to-day is indeed an excellent example of the necessity for 'team work' and of the benefits that may be derived therefrom, and the policy of the Labour movement is to secure similar benefits for all, both within and, as far as possible, without the walls of the hospitals." The paragraph on the "Necessity of Hospitals to a Healthy Nation," despite the ambiguity of its title, has some good points in it; and we accept whole-heartedly a concluding statement that "good equipment, good nursing, easy access to all varieties of specialist help, and the best possible hygienic surroundings are essential in serious cases of illness." The recommendation concerning the relations of hospitals and general practitioners has been the policy of the British Medical Association for many years, but there is some doubt as to the meaning of the phrase, "It is equally important that general practitioners should have a recognized call on hospital consultants and specialists for help with patients of all classes who are being treated in their own homes." In view of the later recommendation that hospital benefit should be free to all and paid for out of the rates, we are inclined to suspect that this is a demand for free benefit of consultant and specialist for all—again as a charge on the rates.

It seems incredible that the paragraph on "Present Hospital Accommodation" should have been issued by any body purporting to represent two great organizations of citizens. "For the realization of these ideals very ample hospital accommodation is essential. Accommodation can best be reckoned by the number of hospital beds available for the treatment of general diseases and accidents, and it has been found on investigation that at the present time there are absurdly few in comparison with the number required to deal with the present population of Great Britain. In the United Kingdom there are 52,194 beds. . . . Taking 2½ beds per 1,000 of the population as the lowest possible minimum for the whole country, the number required for a population of 48 millions is 160,000, which shows a deficit of 107,906 beds." Those who penned this statement must have forgotten that there

are vastly more hospital beds in the country than those of the voluntary hospitals. Moreover, it is misleading to reckon "general hospital" beds as the sole criterion of accommodation. Fever hospital beds are just as much part of the necessary equipment, and should count in the total; any lack of these special beds, or others like to them, means an additional call on the "general hospital" beds. The figure given of 52,194 as the sole available accommodation in the country is absurd. In London alone there are more than this total. According to a return supplied by a public authority, London has over 52,700 beds, made up of fever hospitals, sanatoriums, Poor Law infirmaries, voluntary hospitals, and a number of smaller institutions. Of these, the Poor Law infirmaries provide 15,400, the voluntary hospitals coming next with 12,670. How much reliance can be placed on an argument or on a line of policy resting upon premisses such as the figures we have quoted?

We come now to what seems to us the worst feature of the document. The "Anomalies of the Voluntary System" are described in three pages with several subparagraphs. First, there is the correct statement that the voluntary hospitals were built and endowed by charity for the really necessitous poor, and that "they are now utilized to a great extent by the skilled artisan, and to an increasing extent by the lower middle and even the professional classes." So far as the second clause is true it is the inevitable result of the decrease in the indigent class and the increase in those who recognize the superior benefits of the voluntary hospitals and desire to partake of them. That this is technically a "hospital abuse" (unless the change be recognized in the conditions of admission of these new patients) is also true, and for that difficulty the British Medical Association has been at pains to indicate the remedy. It is further stated that an appointment on a voluntary hospital has a "monopoly value," so that "the number of appointments is jealously guarded, with the result that all big hospitals are badly understaffed." We should like to see the data on which this statement is based. Turning to the *Medical Directory*, we find that the London Hospital, with 922 beds, has a total active medical staff of no fewer than 85, of whom 27 are whole-time residents; this does not include clinical assistants, whose work is by no means negligible; nor does it include the retired "consultants" and the service given by students. Taking a small general hospital—the West London Hospital, with 160 beds—we see that it has an active staff of 42, of whom 7 are whole-time residents; from the enumeration clinical assistants and "consultants" are excluded. If this be understaffing, what are we to think of the State hospitals? The same directory gives the records of the Poor Law infirmaries: we find Hackney Union Infirmary has 910 beds and a staff of 5 qualified practitioners, whilst St. Giles, Camberwell, with 828 beds, has a staff of 6; the other infirmaries do not show so well as these. It is true that these are whole-time residents and that on occasions outside practitioners may be called into consultation; also that there are no out-patient departments; but what is that in comparison with the staffing of the voluntary hospitals? And let it be remembered there are no sinecures on the voluntary hospitals, all work and work hard in their turn. This alleged understaffing, it is said, leads to overcrowding of the out-patient departments, and is even asserted to be responsible for the long waiting lists for admission to beds. So far from this being so, the contrary is the truth—that the staff are so numerous that there is scarcely room enough for them to do their work; the popularity of these voluntary hospitals is becoming their undoing, for the demands made on them are far beyond all that was contemplated at their establishment.

The paragraph on "Nurses" opens with the very true remark that they are grossly underpaid. But it fails to mention the strenuous efforts made in recent years, with a large measure of success, to better their pay, to improve their housing accommodation, and to ensure them pensions, though much remains to be done in this last respect. The Labour party does not contain the only friends of the nurses. Under "Patients" it is alleged that they are unhappy in these hospitals, "for the nurses pay no regard to the mentality of the individual patient, and a general brisk cheerfulness takes the place of any real sympathy or understanding. All medical instructions are faithfully followed, but any needs or demands of the patients outside of these tend to be ignored, and a cut-and-dried unintelligent course of procedure results, against which a private patient would revolt at once." What would the shade of Florence Nightingale say to this reflection on the devotion of her disciples? Not less inaccurate is the statement: "Another cause of lack of confidence and a certain reluctance on the part of patients to enter a hospital is a widespread feeling that they may be made the subjects of experimental treatment." If this be correct, why those long waiting lists? Since it is false, the mere tittle-tattle of cranks, why give publicity to a statement that will increase the alleged fear to the detriment of the sufferers?

On the "Choice of Patients" there is criticism of "letters of recommendation." That the system is very liable to abuse will not be denied, and for many years past the Association has taken action to remedy any proved abuse. Comment is also made on the habit among large business firms of subscribing handsome sums with the expectation of treatment for their employees. But there are also statements which imply a grave kind of abuse on the part of hospital staffs. It is averred that when private practitioners known to members of the staffs send patients to hospitals, the consultant gives preferential treatment to them; and again, that patients are sent to receive private consultations with the members of the staffs at their homes in the expectation that the payment of the fee therefor will advance the patient's chances of admission to hospital. These are allegations which should have been substantiated or not made. If true to any material extent they indicate a scandalous abuse; but we do not believe they are true, or that members of hospital staffs have so low a standard of honour in the consideration of the claims of patients for hospital treatment.

The following concentrated libel upon the administration, the doctors, and the nurses may be quoted: "The system of 'patients' payments' for treatment in the general wards and out-patients' departments of the hospitals is also open to objection. There is a natural bias on the part of the management to admit those who can pay in preference to those who cannot, and, if the fee varies with the patient's means, to select those who pay most. . . . It is difficult for the administration and the nursing staff not to show some slight difference in favour of 'pay patients.'" And lastly, the chances of filling the hospital's coffers leads to the crowding of patients, so that "the quantity of the doctor's work becomes more important than the quality." Such statements are manifestly absurd, for the medical and nursing staffs rarely know on what terms individual patients are admitted: and the doctor does not lend himself to such exploitation, he has too much respect for his work.

According to the Labour party's programme, the remedy for all these alleged abuses is that "hospitals should certainly be free and open to all in need of such services as their general and special departments can and should provide. All things considered, Labour welcomes State and municipal grants towards voluntary hospitals pending the establishment of a complete

publicly supported and controlled hospitals service. It does so for the following reasons: "(1) The hospitals, as hospitals, are necessary for the public welfare, and therefore cannot be allowed to close their doors or their wards for lack of funds. (2) Public grants are the thin end of the wedge, leading to a public hospitals service. (3) As the State and municipal contributions increase, voluntary subscriptions are sure to grow less. (4) The less the voluntary subscriptions the more completely will the hospitals pass under the financial control of public authorities. With complete financial control the management must also pass into the hands of public authorities, till at last all hospitals will be owned, controlled and managed by the public bodies." This is at least a frank statement of an insidious policy, but "in vain is the net spread in the sight of the bird."

Under more general considerations appears the statement that "Undoubtedly in the past the voluntary hospitals have been of the greatest benefit to suffering humanity. . . . Of old, the benefits of hospital treatment were willingly offered and willingly received, and no harm was done; but in more recent times a different spirit has crept in, with the result that Sir Charles Loch, of the Charity Organization Society, once said he was forced to look upon the voluntary hospitals as the greatest pauperizing agency in the country." Yet in the same breath the writers of this document object to the payments by patients for their maintenance and treatment, either when they are ill in hospital or beforehand by means of contributory schemes; they would give it free through the rates; that appears to them to be a harmless and indeed beneficial process. They are insistent that the voluntary hospitals must be swallowed up in State hospitals at all costs, for they are afraid that these charities may live to be a thorn in the side of the unified State scheme that they envisage. "If the voluntary hospitals continue the system of patients' payments, and the public hospitals are free and open to all, which it is essential they should be, there will be a tendency for the former to drift into pay hospitals for the middle classes and the latter to be used by the necessitous poor only. There will then arise a service for the rich and a service for the poor, which is bad from every point of view, and will entail all the evils and odium of the present Poor Law institutions." Should the programme of the Labour party, as indicated in this document, be realized, the prognostications of the writers may prove only too true. As it has been in education so it will be in hospitals; for nothing will prevent the independent minded seeking their own means of treatment or of education. And it may come to pass that in this instance the "establishment" will be held in less esteem than the "free institutions."

The means for the support for all these schemes is to be obtained through the rates, with the sole exception of the great teaching hospitals, which are to be chargeable to the national exchequer. It is said, "In all these ways a complete and efficiently organized public hospitals service can be gradually built up. It can be done so gradually that the cost will hardly be felt." Probably by that time a state of anaesthesia will have come over the helpless ratepayer, or there will be no more of them left to feel. But what of the hospitals? We fear that their final state is aptly described in a phrase of this document: "Many hospitals exhausted by financial difficulties would most likely be only too pleased to give up the struggle and find rest under the public authority." That may prove only too true, for they may find rest in that stagnation which too often marks public control. No doubt the authors of this document mean well, but it is a pity their effort was not submitted to a Pride's purge before it was exposed to the light of public criticism.

TEMPORAL LOBE TUMOURS.

IT has been said that tumours of the temporal lobe are of all cerebral tumours the most difficult to diagnose, or rather to locate. The disturbances of function consequent on destruction of the cells and fibres of this lobe are productive of few clinical signs. Uncinate seizures, that is the peculiar sensations of taste and smell which Hughlings Jackson described so well, are perhaps the most characteristic localizing signs. These, however, are not very common. Any method of investigation which will allow of a more accurate localization of these tumours will be welcomed by all neurological physicians and surgeons.

In the current number of *Brain*[1] Harvey Cushing, in a masterly paper, calls attention to disturbances of the visual fields in these cases. In thirty-three instances out of a total of thirty-nine in which accurate perimetric charts were made, defects were discovered in the visual fields. The optic radiation as it courses backwards from the geniculate body sweeps round the outer side of the temporal horn of the lateral ventricle. The most ventral fibres in this geniculo-calcarine pathway take a wide excursion round the anterior pole of this horn of the ventricle. Adolf Meyer was amongst the first to demonstrate this, and in America the outward sweep of the fibres has been called "Meyer's loop." It will readily be recognized that any lesion invading the temporal lobe will not have to advance very far upon its course before it will involve this portion of the tract. Three drawings by Max Broedel illustrating the course of the fibres are printed in the paper; Cushing calls them "superb diagrams," but the reproductions are not altogether satisfactory.

The material on which Cushing's paper is based has been noted above, but it is worthy of remark that these cases form a part of his huge series of 663 verified intracranial tumours. Of this number 276 involved the cerebrum proper and 59 the temporal lobe. In 20 of these latter cases perimetry was impossible or the results untrustworthy, usually because of lack of sufficient co-operation on the part of the patient. In 25 cases the hemianopsia was incomplete, more or less quadrantic in character. In 8 other cases there was an homonymous hemianopsia; four times the macula was involved. A detailed account of 10 cases is given and will well repay study. The profusion of perimetric charts is of the greatest assistance to the reader, and Dr. Walker, who made them, is to be congratulated upon the results of the labour which he has expended upon them. He has used test objects of varying size, from 10.0 or more to 0.5 mm. diameter. It is interesting to note, as in Cases 5 and 9, that quadrantic defects only became obvious with the smaller test objects. Most of the cases showed diminution in the size of the scotoma after successful operation. Sometimes a complete homonymous hemianopsia shrank to a small quadrantic defect, whilst in cases in which the growth progressed unchecked its extension can be followed by an increasing defect in the fields.

In a general discussion on the symptomatology of temporal tumours Cushing states that only in 14 out of the total of 59 were typical gustatory or olfactory fits found. He calls attention, further, to visual hallucinations as characteristic of tumours in this situation, associated often with uncinate seizures. These hallucinations present actual pictures to the eye of the patient, usually in the blind field, and are often more or less of constant type for the same individual. They tend to be bizarre. Thus one saw "a little black woman engaged in cooking," another a black cat walking across the room, a third people doing strange things, such as

[1] "The field defects produced by temporal lobe lesions," by Harvey Cushing. *Brain*, vol. xliv, Part IV, p. 341.

a woman riding a horse with a sheet of music propped before her. No very definite auditory upset was discovered in these patients with tumours of the temporal lobe, although Heschl's gyrus must have been affected in some.

A contribution of this kind forces upon one the importance to the progress of science and to humanity of the grouping of cases in the hands of one man. No good can come from the dissipation of material which is so precious.

SCIENTIFIC SECTIONS AT THE GLASGOW ANNUAL MEETING.

THE officers of the Section of Medicine at the forthcoming Annual Meeting of the British Medical Association at Glasgow have chosen the following subjects for discussion. First day: "The prognosis and treatment of chronic renal disease," opened by Professor Hugh Maclean. Second day: "Exophthalmic goitre," opened by Professor George R. Murray. Third day: "Degenerative diseases of the liver," opened by Sir Humphry D. Rolleston. In the Section of Ophthalmology it has been arranged on the first day to discuss the etiology of optic atrophy; the opening addresses will be given by Dr. C. O. Hawthorne, Mr. J. Hogarth Pringle, and Mr. H. Moss Traquair. On the second day a discussion on the clinical significance and treatment of heterophoria will be opened by Mr. A. S. Percival. The third day will be given up to witnessing clinical demonstrations at the Glasgow Eye Infirmary. The officers of the Section of Surgery have found that "The treatment of tuberculous glands," which had been arranged as the subject for discussion on the second day of the Section, had also been chosen by the Section of Diseases of Children. As the latter Section has already invited a number of speakers to introduce and take part in the discussion the Section of Surgery has resolved to withdraw the subject from its own discussions. The secretaries of the Section of Medicine will be glad to have the names of those who wish to take part in the discussions. The names of the officers of the Scientific Sections were printed in the SUPPLEMENT of February 18th, at p. 39. The Sections will meet on Wednesday, Thursday, and Friday, July 26th, 27th, and 28th.

PREVENTIVE MEDICINE IN SOVIET RUSSIA.

WE have received a pamphlet (in German) by Dr. Serge Bagotzky on the fight against tuberculosis in Soviet Russia. It is published by the Russian Red Cross in Switzerland, and though no doubt tendencious it contains interesting matter. We are told that before the revolution antituberculosis measures were few and chiefly the product of voluntary organizations, and that even as recently as 1913 only twenty-three sanatoriums with 319 beds existed in Russia. After the Bolshevik revolution all public health services were co-ordinated in a special Ministry section which deals with the problems of tuberculosis. Its organization embraces (1) control of all social measures dealing with tuberculosis; (2) the drafting of orders emanating from the central authority; (3) co-ordination of institutions concerned with tuberculosis; (4) erection of special institutions of both practical and scientific character; (5) propaganda. This supreme authority, which is both legislative and executive, is kept in touch with all strata of the population by a commission which appears to resemble what we should call a consultative council, upon which are medical and scientific members as well as representatives of workmen, teachers, and others. The State campaign is directed to improve the conditions of children and pregnant women and the general hygiene of the working classes. In the first place, efforts have been made to secure the feeding of children. A model central children's institute has been established in Moscow, and, it is said, the number of crèches, milk kitchens, and consultative stations has been largely increased. It is stated that 140,000 infants and 14,000 mothers were provided for by February, 1921. Various stringent laws protecting pregnant women have been enacted. Some of these have a certain grim picturesqueness. For instance, wives of workmen or of soldiers in the Red Army receive 0.7 metre of calico when a baby is born. From the eighth month of pregnancy a woman receives, in addition to the workman's ration, 15 lb. of bread, 1 lb. of butter, and 1 lb. of sugar monthly. Pregnant women need not line up in the queue for ration cards. Other measures do not differ from those familiar to us. Dr. Bagotzky summarizes the guiding principles of the campaign under the following five headings: (1) Complete State control (*Verstaatlichung*) of antituberculosis measures as of the whole field of medicine (*Medizinalwesen*); (2) assumption by the State of responsibility for child welfare; (3) assumption by the State of responsibility for the care of the sick and infirm, especially in the proletariat population; (4) centralization of all antituberculosis campaigning; (5) measures to obtain the active co-operation of all strata of the population, especially of the working classes, in organized antituberculosis measures. Perhaps the first reflection of an English reader of newspapers will be that there is some difference between what is enacted and what is effected even west of Soviet Russia, and he may recall Burke's apophthegm: "Let us be saved from too much wisdom of our own, and we shall do tolerably well." But the name of Burke should warn us that even a man of great genius and learning may form a very incomplete judgement of the nature and consequences of a social revolution, and should increase our regret that the materials for estimating the effects of such experiments in preventive medicine as those summarized in Dr. Bagotzky's pamphlet are so scanty and so adulterated with prejudice. It is probably correct to say that the Englishman of 1922 has no better means of learning the truth about Soviet Russia than had his ancestor of deciding between Burke and Paine.

ALCOHOL IN RELATION TO INDUSTRY.

IN an address on alcohol in relation to industrial hygiene and efficiency, which Sir Thomas Oliver gave before the Royal Society of Arts on March 29th, he said that customs died hard, and yet, on the whole, it might be said that there was less heavy drinking among all classes to-day than there was a few decades ago. Factory work was run on a higher plane, and to-day the artisan began his day's work after having breakfasted at home and without being tempted to purchase stimulants on his way to the factory. Any inquiry into the relation of alcohol and industrial hygiene must have regard to the home conditions of the worker and the manner in which he spent his leisure hours. What merited consideration was rather the effect of the moderate use of alcohol during their leisure hours upon the producing capacity of working men than the premature development of disease and its disabling consequences. Professor Edward Mellanby had made a careful experimental investigation of the conditions which affect the absorption of alcohol, and he found that usually, but not always, the effects produced upon the nervous system were proportionate to the amount of alcohol circulating in the blood. The blood got rid of the alcohol by a process of oxidation, and it was while this was being accomplished that a certain amount of energy was liberated within the body which was utilizable. The larger the amount of alcohol present in the liquid consumed the more quickly was the maximum of alcoholic concentration in the blood reached and symptoms of intoxication produced. Yet there were certain idiosyncrasies—for instance, whisky was found to be more rapidly absorbed than stout even when the percentage of alcohol was the same in the liquid imbibed. It was Sir Lauder Brunton's opinion that alcohol in moderate doses increased the pulse rate, while the opposite view was expressed by Sir Victor Horsley and Sturge. In a sense all of them were right, for alcohol increased or depressed the pulse rate according to the circumstances prevailing at the time. Dodge and Benedict had found that after the ingestion of alcohol there was in almost every instance a relative acceleration of the pulse, meaning by relative acceleration a more rapid pulse than occurred at

a corresponding hour of normal days. They maintained that the increased pulse rate occurred in practically all persons as an effect of alcohol during mental and physical activities, and they inclined to the view that the chief effect was produced on the centres regulating simple muscular movements, rather than on the intellectual centres. Alcohol was certainly not assimilated and did not enter into the composition of the tissues, and on these terms could not be regarded as a food. If, however, it was capable in the body of supplying energy then it was a food, but of an indirect kind, for when alcohol had been absorbed only about 5 per cent. of it was eliminated from the body as such, the remaining 95 per cent. being retained in the body to undergo combustion and be used. It was generally admitted that the subdivision of labour and the multiplication of machinery had made present-day work monotonous, and in certain quarters there was a feeling that alcohol by paralysing the critical faculty blunted the senses to the influence of monotony. Sir Thomas Oliver, while admitting that monotonous work might be a cause of drinking, contended that the remedy was not to denounce alcohol solely but to widen the interests of the working classes by making work more congenial. So far as the man who used alcohol sparingly and in moderation was concerned, neither experience nor physiology showed that he was as a workman inferior to the abstainer. An experiment on a gigantic scale was being carried out by the United States, and the civilized world awaited with patience its results, for by many persons it was held that those nations have been the most progressive whose people had been protein consumers, largely of meat, and who had not denied themselves the luxury of alcohol. It could not be said of the Mohammedan races of Asia and of Eastern Europe, for example, that total abstinence had raised them to a higher plane of civilization or had conferred upon them those practical qualities so characteristic of the men of the West.

AUTO-SUGGESTION AND THE COUÉ METHOD.

M. COUÉ's present visit to this country is attracting more attention than any of those he has previously paid us. The way has been well prepared for him, partly by reverent enthusiasts and partly by irreverent persons who have succeeded in making his name known even to music-hall audiences. M. Coué, who is not, we believe, a member of the medical profession, holds a clinic in his house and garden at Nancy, and to some extent he is in the line of descent of the Nancy school of hypnotism; he diverges from it partly by not directly seeking to produce the hypnotic state, and partly by placing great reliance on what is called auto-suggestion. He does not refrain from resort to suggestion; on the contrary, he makes use of it freely, his favourite phrase in beginning to treat pain or disability being "ça passe," which he makes his patients repeat after him "so fast as to produce a sound like the whirring of a rapidly revolving machine." But he relies more upon inducing patients to think that they are better, or are getting better, or are going to get better. This state of mind he seeks to bring about by inducing the patient to repeat the formula, which is in French "Tous les jours, à tous points de vue, je vais de mieux en mieux." The English version M. Coué considers the most satisfactory is "Day by day, in every way, I'm getting better and better." In this way he seeks to influence the unconscious mind, his basic law being "Every idea which enters the conscious mind, if it is accepted by the unconscious, is transformed by it into a reality, and forms henceforth a permanent element in our life." The formula "day by day," etc., or "ça passe," which is to be translated "it's going," must be repeated very rapidly, so that the contrary suggestion that the pain is not going, or the asthma is not diminishing, or bad temper is not disappearing, will not obtrude itself. You repeat the phrase "It's going" very rapidly until you feel justified in concluding the series by exclaiming "going, going, gone!" All this sounds a little childish, but it at least fulfils the therapeutic maxim, *primum non nocere*. M. Coué will even use the method in cases of organic disease in an advanced stage, not rejecting the possibility of cure, but admitting its unlikelihood. Here, indeed, seems to lie the risk of the method, since persons with organic disease susceptible of cure by operation or otherwise may go on assuring their "unconscious" that "it's going" or "I'm getting better" until the condition becomes incurable. We are informed that M. Coué does not accept fees for his services, but that a pamphlet by him, entitled *Self-Mastery*, is for sale.[1]

THE SANITARY OFFICERS ORDER, 1922.

THE coming into force on April 1st of the Public Health (Officers) Act, 1921, has necessitated the issuing by the Minister of Health of a new Order with respect to the conditions of appointment and duties of medical officers of health and sanitary inspectors. Opportunity has been taken to revoke no less than five previous Orders. The new Order applies either wholly or in part to nearly all medical officers of health and sanitary inspectors. Part-time medical officers of health appointed or reappointed after April 1st last must be appointed for a specified term ending on the following March 31st, and will continue to hold office from year to year unless three months' notice, expiring on any March 31st, is given to terminate the appointment. A similar regulation applies to a whole-time sanitary inspector who is not a senior inspector and one-half of whose salary is payable by a county council or county borough council. A part-time medical officer of health may at any time, with the consent of the Minister of Health, be appointed by a local authority as a whole-time officer, in which case he obtains security of tenure under the Public Health (Officers) Act, 1921. The appointment of a medical officer of health as well as of a sanitary inspector is subject to the approval of the Minister, and every appointment before being made must be advertised. The new regulations with regard to the qualifications of those officials one-half of whose salary is paid out of Exchequer grants are of great importance. A medical officer of health must hold a diploma in sanitary science, public health, or State medicine, or he must have had not less than three years' previous experience of the duties of a medical officer of health. A sanitary inspector must hold the certificate of the Royal Sanitary Institute or of the Sanitary Inspectors' Examination Board. The Minister of Health may, however, dispense with this requirement, or indeed with any of the requirements of the Order, in any case in which it seems desirable to him to do so, provided he is satisfied that the interests of any person will not be prejudiced thereby. The salary paid to the medical officer and to the inspector must be approved by the Minister. The duties to be performed by the medical officer of health are set out much more concisely than in previous Orders, as a memorandum dealing more fully with the subject is in course of preparation. The seventeen paragraphs relating to the duties of a sanitary inspector in the 1910 Order have been reduced to twelve. The important additional duty is cast upon an inspector of supervising the scavenging of his district if so directed by the local authority. He may also be required to act as officer of the local authority under the Rats and Mice (Destruction) Act, 1919. A great deal of care has been bestowed on the drafting of the new Order, and it ought to meet with the approval of all those who desire to increase the usefulness of the public health service. Further particulars are given this week in the SUPPLEMENT.

MEAT INSPECTION.

ALTHOUGH the efficient inspection of meat supplies has long been recognized to be one of the most important duties of sanitary authorities, these bodies appear to have very different ideas as to the manner in which their obligations in this

[1] The quotations are from a small book, *The Practice of Auto-suggestion by the Method of Emile Coué*, by C. H. Brooks; for it M. Coué has written a foreword, in which he says that Mr. Brooks has skilfully seized on the essentials and put them forward in a simple and clear manner. The method is one which M. Coué says "everyone should follow—the sick to obtain healing, the healthy to prevent the coming of disease in the future." (London: George Allen and Unwin. 1922. 124 pp. Price 3s. 6d. net.)

respect should be discharged. In some localities the inspection is carried out by well-trained officials, and is thorough and complete; in others there is, for all practical purposes, no inspection at all; between these two extremes are a very large number of districts in which inspections are made by sanitary inspectors who have had no special training in the duties of meat inspection. At the end of 1921 a Departmental Committee reported to the Minister of Health as to the administrative measures necessary to secure adequate protection for the health of the people in connexion with the slaughter of animals and distribution of meat for human consumption. Some of the recommendations of the Committee can be carried out without recourse to further legislation, while others will require the sanction of Parliament; in the latter category is a proposal that there should be a system of marking of meat which has been duly inspected at the place of slaughter. Without waiting for increased statutory powers a great deal can be done by local authorities by way of increasing the efficiency of inspection. To this end the Minister of Health has issued a memorandum in which he sets out the system of inspection he recommends for adoption. The routine of this inspection is the minimum which would be followed by a well-trained inspector, and the details are sufficiently clearly expressed to enable a partially trained inspector to make a much more thorough inspection than he has perhaps been in the habit of doing. It is recommended that the entire carcass and organs shall be condemned when there is found either generalized tuberculosis or tuberculosis with emaciation, and a very clear statement is made as to the conditions which should assist in determining whether the disease is generalized. Where there are only localized lesions it is recommended that the parts containing the lesions and the contiguous parts shall be condemned. A list of thirty-three conditions is given, the existence of which should lead to the condemnation of the entire carcass. This official recommendation should serve to bring about greater uniformity in the action of meat inspectors than has hitherto prevailed. In a circular accompanying the memorandum the Minister of Health refers with approval to the recommendation of the departmental committee that local authorities in charge of markets or large abattoirs should be urged to give facilities for demonstrations which inspectors and candidates for meat inspection certificates might attend. He concurs also in the suggestion of the committee that there should be two grades of inspectors: one of "lay inspectors"—that is to say, sanitary inspectors holding a meat certificate, possessing sufficient knowledge of the work to enable them to recognize abnormalities, to decide and interpret a definite schedule of inspection, and to recognize those cases requiring more expert knowledge than they possess; the second grade would include expert inspectors, presumably qualified veterinary practitioners, who could assist the lay inspectors in time of difficulty, and in large areas would supervise their work.

CONGRESS OF RADIOLOGY AND PHYSIOTHERAPY.

A CONGRESS of radiology and physiotherapy was to have been held in London in April, 1921, and it was expected that many representatives of France and Belgium would take part in the proceedings. Owing to the threat at that time of a railway strike the congress was postponed. It will be held this year from June 7th to 10th. Like the congress which was to have taken place last year, it has been arranged by the Section of Electro-therapeutics of the Royal Society of Medicine and the British Association for the Advancement of Radiology and Physiotherapy. The president is Sir Humphry Rolleston, K.C.B., and the arrangements are being made by an executive committee, of which Sir Archibald Reid, K.B.E., is chairman, and Dr. Lynham secretary. There will be three sections—radiology, physiotherapy, and electrology. In the first-named section, of which Dr. C. Thurstan Holland of Liverpool is president, the first day (Wednesday, June 7th) will be given to a consideration of the stomach, the conditions of the normal stomach being discussed in the morning, and of the abnormal stomach in the afternoon. The morning discussion will be opened by Dr. Barclay of Manchester, Dr. Peremans of Antwerp, and Drs. Colombier and Tribout of Paris. The afternoon discussion will be opened by Dr. Béclère of Paris, Dr. Murdoch of Brussels, and Sir Archibald Reid. The other subject to be discussed by this section—namely, deep therapy by x rays and radium—will occupy the whole of Thursday and the morning of Friday, June 9th. The opening papers will be contributed by Dr. Ledoux-Lebard and Madame Laborde of Paris, Dr. Casman of Antwerp, Mr. Hayward Pinch, F.R.C.S., Director of the London Radium Institute, and Dr. Robert Knox. In the afternoon of June 9th demonstrations will be given at various hospitals, including one on intraperitoneal injection of oxygen at St. Bartholomew's Hospital. The Section of Electrology, which meets under the presidency of Dr. E. P. Cumberbatch, will give the morning of June 7th to the discussion of the action of the direct current (constant) on the tissues beneath the skin and mucous membrane; it will be introduced by Dr. Turrell of Oxford. On June 8th a discussion on the uses of electrical methods in the diagnosis and prognosis of paralysis will be opened by Dr. R. Woods of London and Dr. Bourguignon of Paris. On Friday, June 9th, Dr. Cumberbatch of London and Dr. Nobele of Ghent will introduce the subject of the physiological action and therapeutic uses of high-frequency currents. The first subject to be debated by the Section of Physiotherapy, which meets under the presidency of Dr. J. B. Mennell, will be cardiac disorders, introduced by Professor Bergonié of Bordeaux and Drs. Justina Wilson, Parsons Smith, and Hunt of London. On June 8th the re-education of muscles and the treatment of scoliosis will be discussed, and on Friday, June 9th, backache and referred pain. Applications for membership of the Congress should be addressed to the honorary treasurer, Dr. James Metcalfe, 123, Harley Street, and should be accompanied by the amount of the subscription if not already paid—namely, two guineas to British members and 40 francs to French and Belgian members. Communications with regard to discussions should be addressed to the honorary secretary of the section concerned—namely, radiology, Dr. N. S. Finzi, 107, Harley Street, W.; electrology, Dr. Murray Levick, 36, Harley Street, W.; and physiotherapy, Dr. P. Jenner Verrall, 1A, Portland Place, W.1, or Dr. L. D. Bailey, 42, Eaton Terrace, S.W.1. An exhibition of x-ray and electrical apparatus is being arranged by a committee, of which Dr. Ulysses Williams, 128, Harley Street, W., is honorary secretary.

THE LEUCOCYTIC COUNT IN INFANTS.

THAT considerable variations can occur in the numbers of leucocytes under definite physiological conditions in adults is appreciated by all haematologists, but the limits of such variation are fairly well agreed upon. It is otherwise in infants, especially nursing infants. In one and the same infant, even during a short space of time, relatively enormous differences can be found, so that any single figure given by an author as a typical normal count cannot be accepted. The possible fallacies of blood counts are not so generally recognized as they should be. The number of leucocytes in a first drop of blood may differ very widely from the numbers in succeeding drops; successive counts from the same drop, even in well-shaken pipettes, show such variations that the average of several must be taken; the smaller blood-counting chambers, such as the Thoma-Zeiss, give results far from accurate. These are only a few of the possible sources of fallacy, and when it comes to a differential count on slides—a slovenly practice too often adopted—the errors may be so magnified that many observers have doubted the utility of leucocytic counts unless the changes are very marked. But even with the most scrupulous technique, few will be inclined to draw conclusions from an enumeration of the white corpuscles in children. Numerous factors exercise an influence on the leucocytic equilibrium. Of these the influence of digestion would seem to be the most important. It has also been shown that the position of the patient, erect or recumbent has an effect on the numbers. The vasomotor reflexes to

local applications of heat or cold, the electric stimulation of nerves, pain, emotional states, and surrounding temperature provoke quite evident leucocytic variations. The influence of crying is specially held responsible for changes in children. All this goes to show that the leucocytic titre is essentially unstable and that according to the time and to the circumstances considerable differences may be encountered. Abel and Brenas[1] have sought to ascertain the variations in infants apart from the factors of digestion. They took samples of blood from children who had had no milk for over six hours, merely a drink of sugared water which, it had been previously ascertained, did not affect the leucocytic curve. Enumerations were made every twenty minutes for three hours. This was repeated after some days' interval. It was found that each individual showed a characteristic curve: some, a low average of leucocytes with small undulations, others a high average with larger and more sudden oscillations. In all cases the line was never horizontal. Between the maxima and minima mean differences of two or three thousand leucocytes were found; indeed, in some cases differences of over five and six thousand were obtained. The authors state that in the majority of their cases they could not attribute these variations to any particular factors.

PATHOLOGICAL AND BACTERIOLOGICAL LABORATORY ASSISTANTS' ASSOCIATION.

UNDER its new constitution the Association of Assistants in Pathological and Bacteriological Laboratories is now admitting as associate members laboratory assistants from laboratories other than those of pathology and bacteriology. The organization, which is not a trade union, was founded in 1912, its chief object being to improve the status of the laboratory assistant by endeavouring to raise the standard of technical knowledge through the medium of an educational programme, culminating in an examination and the granting of a certificate of proficiency in laboratory technique. The examinations are conducted by an examining council in co-operation with the Pathological Society of Great Britain and Ireland. To encourage the systematic teaching of the junior members, lectures and classes in the technique of pathology and bacteriology are conducted by members of the medical profession and of the Association throughout the winter session. An official organ, the *Laboratory Journal*, is issued to members quarterly; in addition to Association news it contains original articles and abstracts of technical interest to laboratory workers. There is also an employment bureau, as to which Mr. F. Norman, New Haw, Weybridge, will give information. From the first the founders had in mind the inclusion ultimately of all laboratory assistants in one federation, and the object of the present movement is to further the realization of that ambition. It is hoped that as willing workers are forthcoming there will spring from the associated membership sections embracing other branches of science following along the lines of the educational programme laid down by the parent organization. In the formation of the associated sections the parent association is prepared to afford assistance financially and by such other means as lie in its power. The Honorary Associate Secretary is Mr. F. C. Padley, 2, Eldon Place, Reading, to whom all applications for associate membership should be made; he will be pleased to furnish any further information.

POST-GRADUATE COURSES IN LONDON.

THE Fellowship of Medicine and Post-Graduate Medical Association has arranged a short course in general medicine in which members of the staff of various hospitals have consented to take part; it will begin on Monday, May 1st, and end on Saturday, May 13th. The course will include clinical lectures and demonstrations in pulmonary affections, disease of the heart, dermatology, mental disorders, children's diseases, and pathology, covering a full day's programme for the two weeks. Another course of six lecture demonstrations on gastro-intestinal affections in children will be given at the Children's Clinic, Western General Dispensary, on Mondays and Thursdays, from May 15th to June 1st, at 5 p.m. Copies of the syllabus and other particulars regarding fees, etc., of both of these courses and of the *Bulletin* will be forwarded on application to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1. By the kindness of the Royal Society of Medicine the Fellowship is arranging to resume the lectures which were so successful in the earlier days, and during May, June, and July it is hoped to hold a lecture in the Society's House once a week at 5 p.m. Sir Arbuthnot Lane, Bt., Sir Humphry Rolleston, K.C.B., and others, have promised to contribute, and the full programme will be announced shortly. These lectures will be open to the profession generally. A post-graduate course, which fulfils the requirements of the regulations for the Diploma of Psychological Medicine in regard to instruction in nervous diseases, will be held at the National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W.C.1, from May 15th to June 30th. Dr. J. G. Greenfield will deliver lectures on the pathology of the nervous system; Dr. Gordon Holmes, Dr. Hinds Howell, and Dr. Kinnier Wilson will lecture on the anatomy and physiology of the nervous system; Dr. W. J. Adie will demonstrate methods of examination of the nervous system; out-patient clinics will be held at the hospital on the afternoons of Mondays, Tuesdays, Thursdays, and Fridays; and clinical lectures and demonstrations will be held on Wednesday afternoons. An inclusive fee of ten guineas will be charged for the whole course, but any part of the course may be taken separately at a special fee. A special arrangement can be made for those unable to attend the whole course, and for details applications should be made to the dean of the medical school. Fees should be paid to the secretary of the hospital on entering for the course.

THE CINEMATOGRAPH AND VIVISECTION.

THE suggestion by Dr. Chalmers Mitchell that cinematography might to some extent replace animal experiments in the teaching of physiology has been seized upon by Mr. Stephen Coleridge and other antivivisection agitators to make an attack on experimental medicine. Other correspondents who wrote to the *Times* showed a complete ignorance of the nature of class demonstrations in physiology. The situation is clear enough and is admirably stated by Professor Starling in the letter which we reproduce at page 570. The law regarding class demonstrations is extremely plain and simple: the animal operated on must be fully under an anaesthetic during the whole experiment and must be killed before it recovers consciousness. That law is of course rigidly and scrupulously obeyed, and it is obvious that no experiment causing any pain whatever to an animal can be performed as a class demonstration. The correspondence that has occurred in the *Times* is a striking tribute to the skill with which the various antivivisection societies have disseminated falsehood and prejudice concerning animal experiments. It is very remarkable that so many fairly well informed persons should have been so misinformed as to the laws and regulations under which experiments upon living animals are performed. The exact value of the cinematograph as a means of instruction is a highly interesting question; it seems to hold out considerable possibilities in the teaching of many branches of medical and allied sciences, and has already been used a good deal for this purpose since the time of Marey, who was one of the first to photograph movement. Humanitarian questions are not, however, involved in this matter.

WE regret to announce the death of Dr. Francis D. Boyd, C.B., C.M.G., Moncrieff-Arnott Professor of Clinical Medicine in the University of Edinburgh and physician to the Royal Infirmary. We hope to publish a biographical notice in a subsequent issue.

WE understand that Lieut.-General Sir John Goodwin's period of office as Director-General Army Medical Services, which terminates on June 1st, 1922, has been extended for a year.

[1] *Comptes Rendus de la Société de Biologie* vol. lxxxvi, No. 7, 1922.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

National Insurance Bill.

THE bill introduced on March 29th by Sir Alfred Mond "to make further provision with respect to the cost of medical benefit and the expenses of the administration of National Insurance benefits" has been printed. Though the proposals are different from the recommendations of the Geddes Committee for the abolition of the Exchequer Grant for medical services, they had their origin in the Committee's report. As from January 1st, 1920, the capitation fee to insurance medical practitioners was increased to 11s. a year. This rate of payment was on January 1st, 1922, reduced to 9s. 6d., and it has been reckoned to leave a balance of about 2s. 6d. per insured person to be paid by the Treasury to the Insurance Committees. To free the Exchequer from this cost the Geddes Committee advised that the contribution from employers and employed should in each case be raised one halfpenny a week per insured person. It was stated that the actual amount of extra contribution required to balance the account would not be much more than a halfpenny a week, but it would have been difficult to apportion as between employer and employed; and so the suggestion was put forward by the Geddes Committee that there should be an equal extra charge of one halfpenny a week and some benefits added. Conference with the representatives of the approved societies, however, showed that they were willing to undertake the extra liability on terms which are embodied in this bill.

The first section of Clause I lays down that there shall be paid each year out of the Benefit Fund of every Approved Society: (*a*) To Insurance Committees in England on account of the cost and expenses of the administration of medical benefit a sum not exceeding 2s. 4½d. a year in respect of each insured person under Section VII of the Act of 1920; and (*b*) to the Minister of Health on account of the expenses of administration incurred by him a sum not exceeding 1½d. per week in respect of each of the total number of the members of the Society.

Section 2 provides that

"There shall be credited to each society out of moneys provided by Parliament in such manner and at such times as may be prescribed by regulations to be made by the National Health Insurance Joint Committee with the approval of the Treasury, such sum (to be calculated in such manner as the regulations may prescribe) as would by virtue of section three of the National Insurance Act, 1911, be payable out of moneys provided by Parliament if the sums paid by the society under this section, together with interest thereon from the date of payment at the rate prescribed for the purposes of paragraph (*c*) of subsection (1) of section fifty-six of the National Insurance Act, 1911, were, on the valuation of the society made next after the passing of this Act, applied for the purpose of additional benefits under the National Insurance Act, 1911."

This section is to come into operation as from April 1st of the present year, and subsection 1 of this section is to continue in force until December 31st, 1923.

Clause II of the bill would abolish the Women's Equalization Fund which was established under Section 2 of the Act of 1918, and this is deemed to have had effect as from January 1st of the present year. The section is to apply to Northern Ireland.

Clause III provides for the application of part of the sums unclaimed in stamps sales account towards cancellation of arrears of payment by insured persons. Hitherto the Central Fund has had the advantage of this uncalculated and uncertain profit. Under this clause the National Insurance Joint Committee is to be empowered to transfer sums to approved societies to be applied to prevent members who are in arrears from being or continuing to be suspended from benefit. The section is to continue in force until December 31st, 1922.

Clause IV sets forth that in the application of the Act to Scotland 2s. 9d. shall be substituted for 2s. 4½d. and 2½d. for 1½d. In the application of the Act to Wales the sum of 2s. 11½d. is to be substituted for 2s. 4½d., and the sum of 2d. is to be substituted for 1½d.

Ministry of Health, Insurance Department.—Dr. Farquharson asked the Minister of Health, on March 29th, by what method the salaries, wages, and allowances of the administrative staff, the general clerical staff, and the Insurance Department staff were apportioned for payment by the Exchequer or National Health Insurance Fund respectively. He inquired why only £130,600 could be recovered from the National Health Insurance Fund, seeing that the cost of the Insurance Department staff of the Ministry amounted to £159,267, and that of the general clerical staff to £329,650—a total of £188,917. He also invited the Minister to explain why the increase for 1922-23 of the amount recoverable from national health insurance funds amounted only to £22,945, having regard to the fact that the increased cost of the general medical staff and insurance department for the same year amounted to £137,612. Sir A. Mond replied that the whole of the salaries of the staff employed in the Insurance Department were paid out of money provided by Parliament, but the cost of the staff employed on the work of detailed administration of benefits carried out by the department was recovered from insurance funds and appropriated in aid of the vote. This work embraced the administration of the Deposit Contributors' Fund, the Navy and Army Insurance Fund, the Exempt Persons' Fund, and the Approved Societies' Officers' Guarantee Fund. The sum estimated to be recovered in 1922-23—namely, £130,600—was the estimated actual cost of this work for the year. The cost of the medical referee service, in so far as it was concerned with the administration of benefits, would also be recovered from insurance funds, and an appropriation-in-aid of £50,000 was estimated for on that account. The increase of the amount estimated to be recovered from insurance funds in 1922-23, as compared with 1921-22, was £77,300, and not £22,945 as stated by Dr. Farquharson. The cost of general clerical staff, to which reference had been made, was for the whole work of the Ministry, and not for the Insurance Department only.

The Insurance Card.—Dr. Macnamara, in moving the second reading of the Unemployment Insurance Bill, on March 29th, recalled that a joint committee appointed by the Minister of Health and himself was considering whether it was practicable to have a single card and a single set of stamps for health insurance and unemployment insurance instead of two cards and two sets of stamps as at present. Owing to the complication of the matter immediate action could not be expected. The Committee had reported that it would not be practicable to bring the single card into use next July.

Nurses and Unemployment Insurance.—Mr. Lyle, in the same debate, raised the case of hospital nurses; he said that a hospital which was advised that nurses were not really included under the old Act was taking a case into court. But the Minister had said they were, and most of them had paid their contributions. Nurses objected to being brought into the scheme, partly because there was little unemployment and they were not inclined to go to the exchanges and form up in queues and wait for doles. Nurses engaged in hospitals had no risk of being unemployed, yet they had to pay contributions. Dr. Macnamara said that nurses were not unanimous in the objection. The National Union of Trained Nurses, in a letter to him of November 8th, 1921, said that though they considered the existing arrangements for administering the Insurance Act for nurses totally unsuitable, yet they did not think that the grant of an exemption would be a wise departure. The nurses could administer the scheme themselves, but as that would involve an addition to the benefits from their own funds he recognized difficulty. He promised, however, to consider the question whether the collection of these contributions from the two sides was justified. In Grand Committee on the bill on April 4th an amendment to exclude hospital nurses was carried.

General Nursing Council.—Mr. T. Griffiths asked, on April 3rd, whether Sir Alfred Mond had informed the General Nursing Council that he was prepared to sanction any rule consistent with the Act which the Council thought necessary. Sir A. Mond replied that he had given no such pledge. He had intimated to the chairman of the Council that he would approve such rules consistent with the Act as the Council thought necessary to meet the serious difficulties which had arisen, and to speed up registration and secure an adequate electorate within the time allowed under the Act.

Salaries of Health Visitors.—Sir Alfred Mond, on April 3rd, informed Mr. Swan he had received representations that the salaries of some health visitors were inadequate. He agreed that these officers discharged duties of great value to the State, but subject to the necessary services being adequately performed he did not think that in present circumstances he ought to require local authorities to pay salaries in excess of what they themselves considered necessary.

Health Services Expenditure.—On March 30th Sir Alfred Mond said that a sum of £1,221,528, mentioned in a question by Dr. Farquharson, represented the estimated net cost in England for 1922-23, not only of the administration of local government services, but also of central insurance administration and certain other services. The corresponding figure in the 1914-15 estimates was £598,267. Included in the amount for 1922-23 was £464,500 for war bonus, an item for which no corresponding provision had to be made in 1914-15. The balance was accounted for by the expansion, necessitated by legislation since 1914-15, in the functions of the departments now comprised in the Ministry of Health, especially in the direction of housing, maternity and child welfare, tuberculosis, venereal diseases, and other services.

Pensions Appeal Statistics.—In reply to Major Kelley, on April 3rd, Major Tryon said that since their institution in November, 1919, Medical Appeal Boards had examined approximately 126,000 officers and men. In 55 per cent. of the cases the assessment had not been altered, in 33 per cent. it had been raised, and in 12 per cent. it had been lowered. He wished it to be understood that these figures referred to the Ministry's Medical Appeal Boards, and not to the Pensions Appeal Tribunals. In answer to Mr. Clynes, Mr. Chamberlain said his information was that the present arrangement for Pensions Appeal Tribunals met with the approval of the ex-service men's organizations. But if Mr. Clynes had any substantial complaint or constructive suggestion that he wished to bring forward, the Minister of Pensions would arrange for a conference with him at which the Lord Chancellor would be represented.

Ex-Service Men in Asylums.—Major Barnston, for Sir Alfred Mond, stated on March 30th that the number of ex-service men, classified as service patients, in country and borough mental hospitals in England and Wales on January 1st, 1922, was 4,991, as compared with 4,673 on January 1st, 1921. He gave particulars of the asylums in which the men are being treated, which show that they are distributed among 92 asylums situated in all parts of England and Wales.

Chemicals under the Safeguarding of Industries Act.—Dr. Murray asked, on April 3rd, whether the President of the Board of Trade was aware that after exhaustive hearings before the referee under Part I of the Safeguarding of Industries Act it was admitted by his department, manufacturers, merchants, and scientists that the term in the schedule "all other fine chemicals" could not be interpreted; and if so, what steps he proposed to take to rectify the matter. Mr. Baldwin said the doubts which had arisen related to only a limited number of cases, which were of a borderline character, and provision for any of these was made in the Act itself.

Asphyxiating Gas.—Mr. Morrison, on March 27th, asked whether in view of the agreement of Washington, under which the use in war of asphyxiating gas was prohibited, it was proposed to close down the experimental ground at Porton. Sir Robert Saunder answered in the negative. The Government would be failing in its duty if it did not take all possible steps which might be necessary to protect the forces of the Crown and the inhabitants of the country against gas attacks in time of war.

Small-pox in the Philippines.—Sir A. Mond, at the instance of Mr. Waterton, gave the following figures of small-pox cases and deaths in the Philippines:

	Cases.	Deaths.
1915 ...	6,265	216
1916 ...	2,520	554
1917 ...	542	255
1918 ...	47,369	16,447
1919 ...	65,180	44,408
1920 ...	10,448	4,386
1921 ...	1,823	790

The Consumption of Alcoholic Liquors.—Asked, on March 28th, by Mr. Hurd, the average consumption of beer and stout and spirits in 1921, compared with that in 1913, on the basis of alcoholic content, Sir Robert Horne said that he could not give the information in the form desired. The estimated quantities, measured in terms of proof spirit, per head of the population, retailed for consumption in the United Kingdom in the years ended December 31st, 1913, and 1921, were as follows: In 1913, 2.61 gallons of beer and stout, and 0.70 gallon of spirits; in 1921, 1.9 gallons of beer and stout, and 0.39 gallon of spirits.

Grading of Milk.—Viscountess Astor asked, on March 29th, whether the Minister of Health was aware that much milk described as nursery, invalids', guaranteed, etc., was merely milk of ordinary quality. Sir A. Mond said he knew this was the case, but had no power to prohibit the use of such descriptions. He hoped that in time it would be recognized that the only designation on which specific reliance could be placed were those authorized by the official grading scheme. He was aware that much of the milk sold in London and in some provincial towns was treated by a process of so-called "pasteurization," but he did not think that this milk was generally sold as raw milk. He had no power to require pasteurized milk to be sold as such, but the matter was under consideration in connexion with further legislation.

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee held on March 14th 32 cases were considered and £453 voted to 28 applicants. The following is a summary of some of the cases considered:

Widow, aged 55, of L.S.A.Lond. who died in 1921, and three children left unprovided for. As applicant was a trained nurse prior to her marriage she is anxious to get a house on the South Coast and take children whose parents are abroad. She received £20 from the Masonic Lodge and at present is living with a sister who has to work for her own living. Voted £15 in three instalments.

Widow, aged 50, of L.R.C.P.Dubl. who died in 1919. Applicant has a house at the seaside and lets apartments during the summer months and in the winter she and her daughter take daily work. They realized £141 8s. 6d. last year and the rent and rates came to £66 per annum. The youngest daughter goes to school daily and lives at home. Voted £20 in four instalments.

Daughter, aged 53, of M.R.C.S.Eng. who died in 1907. Applicant is a trained nurse, but owing to ill health the work is too heavy for her; she is now receiving free training to become a health visitor and asks the Fund for a grant towards maintenance during training. Voted £26 in four instalments.

Daughter, aged 29, of L.S.A.Lond. who died in 1894. She received last year £107 from teaching. Her mother is in receipt of a grant from the Fund of £18 in twelve instalments. She wished to start a preparatory school. Voted £25 to the Royal Medical Benevolent Fund Guild, who have promised to supplement this by a similar amount if they consider the scheme satisfactory.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, K.B.E., C.B., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W.1. The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. Gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

THE fourth Italian Congress of Radiology will take place at Bologna, from May 9th to 11th, in the Institut Rizzoli, with Professor Aristide Busi as president. Full particulars may be obtained from the secretary of the Congress, Dr. Alberto Possati, Villa Verde, Bologna.

Scotland.

POST-GRADUATE TEACHING IN GLASGOW.

UNDER the auspices of the Glasgow Post-Graduate Medical Association arrangements have now been completed for the provision of clinical teaching for medical practitioners throughout the year. Most of the hospitals, general and special, are taking part in the scheme, so that there is a very large amount of available clinical material. The classes and demonstrations are open to all qualified medical practitioners, and the teaching is conducted quite independently of the ordinary classes for students of medicine. The scheme for the summer course (May to October) is a very comprehensive one, including a wide range of clinical classes, but it also offers facilities in the form of clinical assistantships for those who may wish a more intensive study of one particular subject. The syllabus for these courses is now in the hands of the printer and will be available at an early date. Formerly during the winter (November to May) the only teaching facilities offered have been a series of weekly demonstrations, comprising medicine, surgery, and the various specialities. These will be continued during 1922–23, but in addition more systematized courses will be provided. The winter arrangements are not yet complete. The acting secretary for all these post-graduate courses is Dr. J. Norman Cruickshank, The University, Glasgow.

CHILD WELFARE INSTITUTE FOR SCOTLAND.

Progress seems at length to be assured in respect of the proposed Child Welfare Institute for Scotland. On July 30th, 1918, a conference was held in the City Chambers, Edinburgh, at which it was stated that the Carnegie United Kingdom Trust was prepared to establish in Edinburgh a Central Child Welfare Institute for Scotland, and the main functions of the institute were outlined; it was also stated that the Town Council of Edinburgh had heartily welcomed the Trust's proposal, and was of opinion that by the joint action of the local authorities of Scotland and others interested in the movement, with the co-operation of the Government, it should be possible to make arrangements for financing the institute. A provisional committee appointed at this conference has now issued a draft constitution for the organization of the institute; it recommends that the building formerly known as James Gillespie's School should be acquired from the Edinburgh Education Authority, and makes proposals for providing the institute with the income necessary to enable it to carry on its operations. The Scottish Board of Health has informed the City of Edinburgh that it is competent for a local authority to make payments to the institute, and that the Board is prepared to sanction such payments as part of a child welfare scheme under the Notification of Births (Extension) Act of 1915.

GLASGOW ROYAL CANCER HOSPITAL.

The annual report of the Glasgow Royal Cancer Hospital states that during the past year 205 patients had been treated in the hospital, and 40 in the out-patient department, while the district nurse had made 1,514 visits. The ordinary income amounted to £4,357, and the ordinary expenditure to £8,674, but the deficit was more than wiped out by extraordinary income in the form of legacies, etc. A new symmetrical *x*-ray instrument had been installed during the year, and important work was being carried on in the research department, under the auspices of the research committee, of which Professor R. Muir was convener. At the annual meeting of subscribers, held on March 23rd, Sir George T. Beatson said that the hospital was setting a good example of co-operation, as scarcely a week passed in which they did not admit patients from the larger city institutions, such as the Royal, Western, and Victoria Infirmaries. Regarding the problem of cancer itself, he said that surgery could and did effect cure in the early stages of the malady, but a great many cases did not come under the view of the surgeon until they were beyond his assistance and had become inoperable; these mainly were the cases which came to the Glasgow Cancer Hospital. It was too early to speak of the results of the new symmetrical *x*-ray apparatus, but he could say that they were already such as afforded encouragement. The policy of the directors was that their funds should be devoted first to the immediate relief and care and treatment of the patients, and the residue should be devoted to research, but in order to develop the latter branch the directors had decided that there

should be a special research fund. He did not know of any object to which a man with riches could devote his money with better advantage to the community than in helping Scotland to take her share in the work of cancer research.

GLASGOW MEDICAL LUNCH CLUB.

The weekly meeting of this club on March 30th took the form of a general guest day, when a number of members took the opportunity of bringing with them one or more guests. In the absence of the president, Dr. F. R. Martin, Dr. David McKail occupied the chair. Amongst the guests was Mr. Logie, president of the Glasgow Rotary Club, and after lunch he addressed the members. Thereafter some discussion took place as to the advisability of continuing the weekly meetings during the summer months. Meantime it was decided to hold weekly meetings during April, leaving the matter of summer meetings to be decided later.

ANDERSON COLLEGE OF MEDICINE, GLASGOW.

There was a vacancy in the chair of medicine in this college, owing to the resignation of Dr. John M. Cowan. This has now been filled by the appointment of Dr. Hugh Morton.

Correspondence.

RICKETS.

SIR,—In a communication made by Professor D. N. Paton to the Glasgow Medico-Chirurgical Society, and published in abstract in the BRITISH MEDICAL JOURNAL of March 4th (p. 351), there occurs the statement:

"Recently an attempt had been made to prove that it [that is, rickets] was caused by the absence of a hypothetical antirachitic factor probably identical with the fat-soluble A substance. The author of this contention had now abandoned this view, and had reverted to the long-accepted theory that various errors of diet predisposed to rickets."

As a general rule, I think it is inadvisable for an investigator to reply to misstatements or criticism by correspondence independently of his scientific publications; but the above sentences, occurring in the medical press, and therefore read almost exclusively by medical readers who cannot have the opportunity of keeping in close touch with the details of all medical research, are so misleading that they demand my attention. For I understand that, although not referred to by name, I am the "author of this contention."

What I specially wish to deny is the statement that I have put forward certain views on rickets and have now abandoned them. The sentences quoted above constitute, in my opinion, an example of both the *suggestio falsi* and the *suppressio veri*. They suggest that there has been a catastrophic break in my research on rickets involving the disproof of the main facts and the throwing over of ideas previously held and published by myself. This is an incorrect suggestion. They suppress the fact that even in my lectures on rickets in 1918 (*Lancet*, 1919, i, 407), although they only represented a summary of my work up to that time, I made it clear that rickets could not be regarded as a deficiency disease of the same nature as scurvy, for the accessory food factor which played an important part in the etiology of rickets was more influenced in its action by other elements of the diet and the environment than appeared to be the case with the antiscorbutic vitamin. In the second lecture of this publication I stated:

"For we know something of the part played by accessory food factors in such deficiency diseases as beri-beri and scurvy, and we know something of the part played by these substances in growth, but in the case of rickets we are apparently up against a combination of both deficiency disease and growth, rickets, in fact, being a disease accompanying growth."

Again, in the same lecture, I stated:

"Since, further, the dietetic problem is one of balance, foodstuffs which contain no antirachitic factor cannot be considered as neutral but as positively rickets-producing, for the more of them that is eaten the greater is the necessity for foods containing the factor. It is probable that bread is the worst offender."

Even the effect of exercise and its relation to the dietetic theory of rickets I mentioned in the first publication and discussed at greater length in the second publication (*Lancet*, 1920, i, 550), and the views on this point that I advanced then are substantially the same as I hold to-day. How near all these ideas approximate to my later views can be seen in my last and more complete publication on the subject of rickets—namely, Special Report Series, No. 61, Medical Research Council.

Research has only touched the edge of the subject, and the amazing amount of work on rickets now being started in America and elsewhere may soon necessitate modification and extension of my published views as to the process of events occurring in this disease. It is possible that the deductions made from my experimental work on rickets may prove absurd, but I am not convinced that this has yet happened, nor have I seen any reason to abandon my earlier published views.—I am, etc.,

The University, Sheffield, March 28th. EDWARD MELLANBY.

PROFESSIONAL SECRECY.

SIR,—At the Representative Meeting in 1921 a motion was carried:

That the Association use all its power to support a member of the British Medical Association who refuses to divulge, without the patient's consent, information obtained in the exercise of his professional duties, except where it is already provided by Act of Parliament that he must do so.

On a technical point this did not become the policy of the Association, but presumably this or a similar motion will again come up in July, 1922, with a view to its being adopted as the policy of the Association. It would be well, therefore, to examine the historic precedent for this attitude.

Reference was made, at the Representative Meeting of 1921, to the provision affecting professional secrecy contained in the Hippocratic oath, but its purport was, I think, distorted. In this oath, taken by members of the Asclepiad guilds about to be initiated into the art of medicine, and contained in the works of Hippocrates, the relevant clause runs as follows: *ἃ δ' ἂν ἐν θεραπείῃ ἢ ἴδω ἢ ἀκούσω, ἢ καὶ ἄνευ θεραπείης κατὰ βίον ἀνθρώπων, ἃ μὴ χρή ποτε ἐκκαλέεσθαι ἔξω, σιγήσομαι, ἄῤῥητα ἡγεύμενος εἶναι τὰ τοιαῦτα* ("Whatever things I shall see or hear in the course of practice or apart from practice relating to human life, which are not fitting to be proclaimed outside the house, I shall keep to myself, considering such things to be not matters for conversation").

The whole phraseology of the original, and especially the use of the words *ἐκκαλέεσθαι* and *ἔξω*, indicates that unwarrantable gossip about a patient's private affairs is the thing forbidden. There is no prohibition, either specified or implied, against revealing anything required for the public welfare.

The *Sponsio Academica*, which at certain universities is signed by the graduate when he receives a degree in medicine, is even more definitely prohibitive of idle talk regarding professional matters and permissive of their revelation when there is due cause, in the words: *Spondeo . . . quae, denique inter medendum visa vel audita sileri conveniat, non sine gravi causa, vulgaturum* ("I promise . . . that I will not make public, without serious reason, those things, seen or heard in my practice, upon which it is fitting to be silent").

The doctrine that a witness in a court of law, because he happens to be a medical practitioner, should decide what things are admissible in evidence and what are not admissible would appear to be one of very recent origin. Surely few practitioners would ask for better guidance as to what should be divulged or not divulged than the opinion of a judge who, by his training and position, is specially skilled in the rules and proprieties of evidence.—I am, etc.,

JOHN D. COMRIE, M.D., F.R.C.P.,
Lecturer on History of Medicine in the University of Edinburgh.

Edinburgh, March 30th.

RUPTURE OF EXTENSOR LONGUS POLLICIS TENDON.

SIR,—The correspondence on the above in the JOURNAL would seem to indicate that this injury is not so rare as has hitherto been supposed.

In a pamphlet on *Colles's Fracture*,[1] published in 1905, I drew attention to this complication and cited the case of an old woman, aged about 70, who sustained a Colles's fracture and noticed when the splints were removed that she could not extend the distal phalanx of the thumb on the affected side. Four months after the accident I operated and found the tendon of the extensor secundi internodii pollicis (extensor longus pollicis) torn near the site of fracture. The distal portion of the tendon was united to the extensor primi internodii pollicis (extensor brevis pollicis) with a good functional

[1] *Colles's Fracture and other Fractures at the Lower End of the Radius and Ulna*. Belfast: Alex. Mayne and Boyd, 1905.

result. I attributed the rupture to trauma produced by the sharp edge of the lower fragment at the time of injury, and not, as Stapelmohr suggests in his cases, to necrosis and subsequent rupture of the tendon.

The pamphlet referred to was based on an account of seventy cases of fractures and disjunctions at the lower end of the radius and ulna read before the Ulster Medical Society during the session 1904–5, and published subsequently in the *Medical Press and Circular* (May 31st and June 7th, 1905).—I am, etc.,

Belfast, March 27th. ANDREW FULLERTON.

ROUTINE PELVIMETRY IN ANTE-NATAL CASES.

SIR,—I read Dr. Thorne Thorne's letter (March 25th, p. 498) on routine pelvimetry with appreciation; I also had thought that the value of such practice had impressed itself generally. At the same time I view with surprise Dr. Thorne Thorne's trust in the external conjugate. This I regard as the most fallacious of all the pelvic measurements. The fifth lumbar vertebra is frequently difficult to locate and the amount of soft parts covering it very variable.

I use the intercristal and interspinous measurements together with their ratio to determine whether I have to deal with (*a*) a normal pelvis, (*b*) a flattened pelvis, or (*c*) a generally contracted pelvis. More important still is the estimation of the internal or true conjugate. This is determined by subtracting 3/4 in. from the diagonal conjugate as found by the examining fingers in the vagina.

In extension I endeavour to watch the advent of any albuminuric complications by the routine monthly examination of the urine.—I am, etc.,

Woking, March 28th. R. STAFFORD FOSS, M.B., B.S.Lond.

THE TREATMENT OF INSOMNIA.

SIR,—May I suggest that Professor Rudolf, in his article on the treatment of insomnia (BRITISH MEDICAL JOURNAL, March 11th), omits a therapeutic method of some importance, and one especially useful in the cases which fall within the groups presented in his first table. I refer to the use of high-frequency currents.

For twenty years I have found this method highly efficient in cases where insomnia is associated with a hypersensitive nervous system, dependent on such conditions as neurasthenia, exhaustion, chronic toxaemia, or circulatory disturbances. I employ the currents either by the condenser couch or through the hand of the operator when it is used to apply massage particularly to the patient's back. Even when the currents are prescribed for reasons other than insomnia, it is frequent to learn from the patient that he is sleeping better, and in chronic cases of sleeplessness I know no more valuable remedial agency. In contrast to drug treatment, high-frequency currents produce no ill effects, and the sleep obtained is natural and refreshing.

In part no doubt by the removal of sleeplessness, and in part by their direct effects, the currents exercise a beneficial influence on the general tone of the nervous system, and depressing after-effects or other disadvantages are conspicuous by their absence. I trust this brief summary of my own experience may tempt some of my colleagues to put the issue to a practical test.—I am, etc.,

Glasgow, March 17th. W. F. SOMERVILLE, M.D.

INSANITY AND THE ENDOCRINE GLANDS.

SIR,—The leading article in your issue of March 18th on insanity and the reproductive glands, associated with the publication last week of Sir Frederick Mott's lecture on the reproductive organs in relation to mental disorders, induces me to make public certain conclusions to which I have come as a result of the treatment of mental disease with the endocrine glands.

No one can doubt the pathological findings of such an authority as Sir Frederick Mott, whose work in connexion with the pathology of mental disease is recognized all over the world. At the same time one cannot close one's eyes to the fact that the reproductive organs are non-essential to mental health, and that therefore they cannot be the entire cause of dementia praecox. Indeed, the author acknowledges this by recognizing the presence of an "inborn germinal defect" in the majority of these patients. There is, further, the absence, so far, of any great clinical evidence that the medicinal administration of the reproductive glands will cure this condition. Dr. Ford Robertson—another distinguished pathologist—has already published a list of cases supporting his hypothesis that dementia praecox is caused by microbic infection of the intestinal tract. He also holds, however, that there is an hereditary defect that makes this condition possible.

From the manner in which both manic-depressive insanity and the earlier cases of dementia praecox respond to treatment by thyroid extract, especially in those who have a psychopathic inheritance, I have formed the opinion that this inheritance is of a purely hypothyroidal nature. I hope to be able to publish some cases and arguments in support of this contention, and it is enough now to state that by judicious thyroidal treatment the illness of manic-depressive patients can be shortened to a marked extent, and, indeed, in some cases, aborted. In the earlier cases of dementia praecox a satisfactory result can also be obtained, and I hold that, if one could treat these patients with thyroid extract at a sufficiently early date, a very marked diminution of the population of our mental hospitals would become noticeable within a few years.

I should also like to point out that the inheritance in mental disease is not confined peculiarly to that abnormal state. It also covers many diseases that are known to have a certain familial relationship and at the same time an association with mental disease. In this connexion I would mention tuberculosis, the gouty diathesis, certain intestinal affections, and malignant disease. To me these and several other conditions primarily arise from a hypothyroidal state of the tissues upon which the more immediate cause of the particular disease is apt to flourish, and I believe that for a permanently successful result it is essential that this hypothyroidal state should be remedied.—I am, etc.,

St. Patrick's Hospital, Dublin, March 27th. H. R. C. RUTHERFORD, F.R.C.S.I.

COMPARATIVE PATHOLOGY.

SIR,—The perusal of your leader in the issue of March 25th, 1922, in which some of the recommendations contained in the Report of the Advisory Committee on Research into Diseases in Animals are reviewed, urges me to refer to the work of the University of Liverpool in this subject.

In 1896 a medical graduate of this university, H. E. Annett, M.D., D.P.H., was awarded an 1851 Exhibition Scholarship and engaged in research at London and Berlin during 1897–99 on "the relationship of diseases of animals to those of man." Subsequently, during his association with the Liverpool School of Tropical Medicine, diseases of animals in tropical and subtropical countries were investigated. In 1904 Dr. Annett was appointed Lecturer in Comparative Pathology in the University of Liverpool with special laboratory accommodation, and Superintendent of the Farm Station of the Institute of Comparative Pathology (affiliated with the university) at Runcorn. From this nucleus the School of Veterinary Science in the university evolved, and in this school in 1906 the Lectureship in Comparative Pathology was elevated to a chair. After five years, however, owing to the lack of permanent endowment, the chair lapsed.

During the last ten years Dr. Annett has continued, as opportunity permitted, to maintain interest in this subject at the Runcorn Research Laboratories, and is at present engaged in similar research work in the university.—I am, etc.,

University of Liverpool, April 3rd. R. E. KELLY, Dean of the Faculty of Medicine.

REDUCTION OF MEDICAL FEES.

SIR,—With interest and amazement increasing as I progressed, I read Dr. W. McD. Ellis's letter in the BRITISH MEDICAL JOURNAL of April 1st (p. 538). Possibly it was his realization that to-day would be Saturday, April 1st, and that the majority of us would be reading the BRITISH MEDICAL JOURNAL with our breakfasts this morning, that explains the presence of his letter. I cannot bring myself to believe that it is intended to be taken seriously.

When the cost of living began to rise I think it rose for the doctor as well as for his patients, with this difference, however—the average patient got a war bonus or increased wage, or both, to compensate him much earlier than his doctor. When the doctor did get his belated increased fee it was only a 50 per cent. increase, and, as Dr. Ellis says, the cost of living was at high-water mark. At that time I think I am right in saying that a £1 note was worth about a pre-war 8s. 6d., so that a 50 per cent. increase hardly squared things for us. The cost of living appears to me to be still well above 50 per

cent. more than in pre-war days, so why should the profession decrease their fees? When the cost of living sinks below that mark—50 per cent. above the pre-war level—we might pause to consider Dr. Ellis's suggestion, but even then should we decrease? Were some doctors' fees in pre-war days just recompense for their services?

A certain standard of efficiency is demanded of us by the community, certain expenses have to be met in attaining that standard, and further expenses in obtaining a practice. From a business point of view one wants a fair wage for one's services, plus a fair return on the capital expended and invested.

I believe that to this standard of efficiency little additions are made on frequent occasions, such as optional subjects becoming compulsory; a minimum of four increasing to five years of study after registering as a medical student; the abolition of unqualified assistants, etc.

Have fees charged kept pace with these demands upon us? How long is it since doctors increased their fees previous to this occasion under discussion? I do not know, but I think I recollect reading that medical men charged half-crown and guinea fees during the reign of Queen Anne. In any case those two figures have had a pretty long reign, and the cost of living must have undergone several increases since they were instituted, apart from the possibility of medical practitioners increasing 50 per cent. in efficiency during the last couple of generations. Yet many a doctor to-day receives 2s. 6d. per visit and 3s. 6d. per bottle of medicine; surely that is little enough.

Then, again, there are the ex-service men. Some had practices which they sold for a song, and they joined up. Others had taken out extra classes and extra degrees, hoping to specialize, but instead they joined up. Now both these are trying to settle into practice, wishing that some of this money which it worried them so little to sacrifice had not slipped away. As it is their gratuities, together with gifts and loans from parents, have been recently invested in practices whose prices had become inflated much above their 1914–17 values. At that period many a man had no choice but to sell or leave his practice, to the advantage of those unfit for service. Thus they now lose capital a second time.

I wonder how many of these subtracted the amount of the panel cheque just arrived from that for last quarter, thinking "Yet another injustice to the ex-service man, and the excuse given for it was 'patriotic reasons.'" Dr. Arthur T. Todd-White's letter in the SUPPLEMENT of this same date will harmonize better with their sentiments than Dr. Ellis's letter.

We ex-service men have learnt to suffer much in silence, but one at least cannot stand by whilst a medical practitioner takes the initiative in dealing the profession another blow which hits us hardest of all its members. Probably Dr. Ellis is well under way with life's race, and therefore has lost sight of us who are taking our places at the start, so full of indignation over our present handicap to be in no mood for considering a further increase of it.—I am, etc.,

Standish, Lancs, April 1st. T. WILSON SHAW.

SIR,—While the reduction of medical fees that Dr. Ellis recommends may be advisable in better-class practices, I consider it decidedly inadvisable in the case of the private practice of a panel practitioner.

A few months ago the maintenance of our private fees at their present level was assured us and advanced as an inducement to us to submit to the recent reduction in the panel capitation fee. The relatively higher remuneration of private practice I consider to be most valuable both as a stimulus to sound careful work and as a discouragement for any man to develop his panel, with all the degradation and perfunctory drudgery it entails, at the expense of his private work, in which competition, if fair, is so healthy and stimulating.

The effect on the lay public also will be equally beneficial and salutary.—I am, etc.,

Dukinfield, April 2nd. JAMES BRIERLEY, M.D.

SIR,—In your issue of April 1st one correspondent takes the view that every medical man is worth £2,000 per annum—he does not say whether he means net or gross. Another suggests that the Association give a lead in the way of reducing fees—as some time since they advised their being raised by 50 per cent. I feel gratified to be told I am worth so much, and only wish I could make it—even gross at 4s. for surgery advice and 4s., 5s., up to 7s. 6d. and 10s. 6d. per visit—the last figure a rarity. I hope the Association will make no move in the matter. It is a question of supply and demand largely. The Government have docked from those who have a panel more than they had reason to, never having given them their full due.

I have been twenty-eight years in practice very nearly. If patients are not disposed to pay me more than 2s. 6d. or 3s. 6d. they must go elsewhere, and I shall be left more leisure—and little the poorer. If a young opponent thinks he can gather at my expense by the process known as "undercutting," well, he must do it. But I don't see why the British Medical Association should help him, nor why they should give the public a thick stick to beat me with.

As regards the alleged "unpopularity" of doctors I have not yet experienced it, or I may be too innocent to see it. I do not work in an industrial district, however, I must admit. I think the lead of the Association as to raising fees by 50 per cent. was adopted by few to the full extent or anything like it.—I am, etc.,

April 3rd. M.D.

VENEREAL DISEASE.

SIR,—Mr. E. B. Turner and Mr. Charles Gibbs declare that, as far as self-disinfection is concerned, they confess themselves "unimpressed" by the data so far published. They think that we should have collected the figures ourselves, and that "an independent expert in statistics" would have reached different conclusions. But how could we collect the figures, and why would statistics collected by us be especially impressive? The statistics which they find unimpressive were collected in the ordinary course of duty by naval and military medical officers. In each case the officer had so many men (an army corps, or the troops in a couple of English counties, or a regiment, or a group of barracks, or a ship) in charge; so many cases of venereal disease occurred among them during such and such a length of time; therefore the venereal rate per 1000 per annum was such and such. These are the figures which, according to the thinking of Mr. Turner and Mr. Gibbs, call for "an independent expert in statistics." What scope is there here for a statistician, however "expert"?

For two years the troops in Reid's medical charge stayed with him on the average for many months—on garrison duty or undergoing training. Then his barracks, which had emptied somewhat during the German offensive, were swamped with troops from overseas—highly infected birds of passage. But his figures do not stand alone. Disease contracted by the instructed men sank in the whole area to the vanishing point.

When confronted with figures, all of which can be tested from official records, Mr. Turner and Mr. Gibbs are "not impressed"; but surely the important point is that a knowledge that disinfectants will disinfect has been sown broadcast over the empire. The work is done, and will certainly prevail against all obstacles, governmental or otherwise.—We are, etc.,

H. BRYAN DONKIN,
London, March 29th. G. ARCHDALL REID.

THE CONFERENCE OF STAFFS OF HOSPITALS.

SIR,—Dr. Garratt of Chichester appeals to me for help in a difficulty. He thinks there is an inconsistency between two of the leading recommendations of the Council on the organization of voluntary hospitals, both of which were passed by large majorities at the recent conference of staffs of voluntary hospitals. He suggests that the approval of the recommendation for the transfer of a percentage of the payments of patients of these hospitals to the staff fund (par. 33) is incompatible with the approval of the definition which claims that the essence of the voluntary hospital system is its independent and voluntary management (par. 7). He asks, How can we claim recompense for our own services and deny the same to the management? I have re-read the report and I fail to find any statement or implication that the management should be paid or unpaid. Dr. Garratt's difficulty arises from his attaching to the word "voluntary" the meaning *unpaid*, a meaning it does not necessarily bear. It would be easy to cite a dozen conditions in which voluntary services are paid and unpaid. Has Dr. Garratt already forgotten that unique voluntary effort in which hundreds of thousands of our countrymen flocked to the national standards? Did he deny these men their proud claim to be volunteers and not conscripts because they received pay and allowances according to scale? Probably in the generosity of his heart he would have wished for them double the pay of the conscript.

We define the voluntary hospital system as independent and voluntary, not in relation to money but to control. The State hospitals are established and maintained under the authority of Acts of Parliament; their provision is obligatory, and the local and central authorities have powers of control. Voluntary hospitals are free, both from statutory obligation and control. The point was clearly in the mind of the Conference; indeed, one representative urged that there should be added to the definition words declaring this freedom; but the suggestion was rejected, for there are other forms of control that may threaten the independence of the voluntary hospitals even more than State or municipality.—I am, etc.,

London, W., March 31st. N. BISHOP HARMAN.

REMEDIAL EXERCISES IN SCOLIOSIS.

SIR,—In the report of the proceedings of the Orthopaedic Section of the Royal Society of Medicine, appearing in the BRITISH MEDICAL JOURNAL of March 18th on the above subject, I looked in vain for reference by any of the speakers to Professor Sherrington's recent epoch-making discoveries on the "postural contraction of muscles." In such a static condition as scoliosis these discoveries most particularly apply; in fact, they revolutionize the old-fashioned exercises referred to by most of the speakers.

The absence of any reference to this physiological discovery anent muscle function is proof positive that a revision of the present methods of remedial exercise treatment is urgently needed.—I am, etc.,

Liverpool, March 23rd. W. H. BROAD.

Obituary.

W. AINSLIE HOLLIS, M.D., F.R.C.P.,

Consulting Physician to the Royal Sussex County Hospital, Brighton; late President of the British Medical Association.

WE announced last week with much regret the sudden death, at Hove on March 26th, of Dr. W. Ainslie Hollis, who was President of the British Medical Association when it met at Brighton in 1913. Although in his 83rd year, Dr. Hollis seemed in good health, and in spite of the cold weather had taken his usual tricycle ride on the previous day.

William Ainslie Hollis was born in 1839 at Lewisham, where his father, Dr. W. M. Hollis, had a large and arduous practice. From Brighton College he went to Trinity College, Cambridge, and graduated B.A. in the Classical Tripos, becoming M.A. in 1866. His medical education was received at St. Bartholomew's Hospital, where he held in turn the offices of house-physician (being one of the first to be appointed after the abolition of the post of hospital apothecary), medical registrar, and casualty physician. His colleagues among the house-physicians first appointed in 1867 included Dr. Philip Hensley, afterwards physician to the hospital, and also a Cambridge man. Hollis graduated M.B. in 1867 and M.D. in 1871. In accordance with the wish of his father, who did not think him robust enough for general practice, he decided to become a physician, though Sir George Humphry, with whom he worked for a short time in Cambridge, had tried to persuade him to take up surgery. He was a candidate for the post of assistant physician to St. Bartholomew's Hospital when Sir Lauder Brunton was elected. At that time he was investigating the nature of inflammation and the causation of atheroma and arteritis, and is said to have been one of the first to use a clinical thermometer in the wards of St. Bartholomew's. The short clinical thermometer, it will be remembered, was introduced by Sir Clifford Allbutt in 1868.

In 1874 Hollis went to Brighton, where he was soon elected assistant physician to the Royal Sussex County Hospital. He subsequently became full physician, and finally, on his retirement from the active staff, honorary consulting physician. He was elected a Fellow of the Royal College of Physicians of London in 1876. His private practice was never large, his work tending more towards literary and scientific subjects. He became President of the Brighton and Sussex Medico-Chirurgical Society and of the Brighton Natural History and Philosophical Society, and his fine collection of British macro-lepidoptera was presented by him to the Hove Public Library.

Dr. Ainslie Hollis was a loyal and active member of the British Medical Association, and those who attended the Annual Meeting at Brighton nine years ago will remember that its great success was largely due to the efforts of the President, who, although at that time getting on in years, worked hard for months beforehand to ensure this result. He attended the opening meeting of the Representative Body, and all through manifested the greatest interest and activity in all the arrangements made to ensure the instruction and entertainment of the visitors. At the conclusion of the meeting he accepted an invitation from the Eastbourne Division to join a series of excursions in that town, which occupied the whole of the day, and responded to the toast of the British Medical Association at the lunch given by the Association. His Presidential Address on "The medical history of Brighton" was a scholarly production worthy of the high office he held; it was printed in full in the BRITISH MEDICAL JOURNAL in August, 1913. During the week he gave a series of luncheons to the medical visitors from all parts of the country, and his numerous guests bore witness to his hospitality. He was present at all kinds of functions and discussions during the ten days of the Annual Meeting, and entered fully and heartily into the social, scientific, and business sides of the meeting. At the reception given by the President and the Division at the Hove Town Hall, where he was assisted by MRS. and Miss Hollis, Dr. Hollis welcomed the many guests individually. Altogether he helped to make the Annual Meeting of 1913 a great and remembered success. As a token of the respect and esteem in which he was held by his colleagues he was presented just before the delivery of his Presidential Address with a replica in gold of the President's badge of office.

Dr. Hollis took his part in municipal work. In 1890 he was elected a member of the Hove Commissioners, on which body he served for eight years. Later, when the Borough of Hove was incorporated, he was elected a member of the Town Council, and served on the Technical Instruction and Library Committees; in the work of the latter he was particularly interested. He was a good classical scholar; he read Latin as fluently as English, and could translate Spanish and Italian with ease, though he had never learnt those languages. His commentary for the M.R.C.P. diploma was written in Latin. His published books and papers include "Among the Tetchas in Central Asia" (a work of fiction much on the lines of Rider Haggard's "She," which was published soon afterwards), "How to avoid a common cold," and also many papers in the *British Medical Journal*, the *Lancet*, the *Journal of Anatomy and Physiology*, the *Journal of Pathology and Bacteriology*, and elsewhere, including contributions on "The joint of a fowl's tongue and its vocal function," "Disseminated fibrosis of the kidney," and "The duration of life in infective endocarditis." Among his hobbies were cactus growing, photography, and cycling. The versatility of his character is further shown by the fact that he drew the plans and superintended the building of the house he dwelt in during the last ten years of his life.

The following notes on matters connected with his father's work, by his son, Dr. S. Hollis, may be added to complete the memoir:

A point of some interest is the fact that in 1852 my father and grandfather were in Paris. My father told me how the clotted blood remained on the mould round the trees in the streets after Napoleon III's friends carried out the *coup d'état* by which President Buonaparte became Emperor. When a student (students visited patients then) he sat up at night with a woman suffering from haemorrhagic small-pox during the epidemic in London, her appearance being such that no one would go near her except one old woman who had had small-pox and who was off duty that night. After being house-physician at Bart.'s he held the same post at Victoria Park Hospital, and an epidemic of cholera visited London during that period. Soon after this he advanced the suggestion that inflammation (including sequelae such as fibrosis) was a local condition independent of the central nervous system, and showed that it could occur in a severed limb, such as a lizard's tail. Later he developed this idea in his writings on arterial, renal, and cardiac disease, holding that atheroma is a local disease, although a widespread one; that arteritis may be due to poison produced within the system or, as in the case of lead poisoning (much commoner in those days), introduced by the mouth, but in both cases acting locally on the arterial wall while circulating in the blood stream.

The funeral service took place at the Brighton parochial cemetery on the afternoon of March 30th, and the interment afterwards in the family vault. Dr. E. R. Fothergill represented the Council of the British Medical Association, Dr. Sanderson and Dr. L. A. Parry the Brighton Division of the Association, and Dr. Whittington the Sussex Medico-

Chirurgical Society. Many colleagues on the staff of the Royal Sussex County Hospital were present, including Drs. Hobhouse, Jowers, Broadbent, Bowring, and Fletcher. Dr. Hollis leaves a widow, two daughters, and a son, Dr. Stanley Hollis, in practice in the same town as his father.

CHARLES PARSONS, M.D.,

Consulting Medical Officer to Dover Hospital, and one time Treasurer of the British Medical Association.

THE death of Dr. Charles Parsons of Dover, briefly noticed in our issue of last week, removes one who in his day and generation unassumingly did good work for the profession. He rendered great services to the British Medical Association throughout almost the whole of his professional career, and the South-Eastern Branch, which included the counties of Kent, Surrey, and Sussex, benefited greatly from his keenness, business capacities, and foresight.

He was born in 1833, and was educated at King's College, London, and Edinburgh; he took the diplomas of M.R.C.S. and L.S.A. in 1855, and graduated M.D.Edin., with honours and the gold medal, in 1864. After holding the offices of house-physician and assistant house-surgeon at King's College Hospital he was for some time house-surgeon to the North Staffordshire Infirmary. He settled in Dover in 1868 and was appointed medical officer to the Royal Victoria Hospital there. He retained the position for thirty years, and during his long life in Dover occupied a leading position in medical and social life. He took a great interest in education, and was one of the founders of the Dover College, which now ranks high among public schools. He also organized and was secretary for many years of the Cambridge Local examinations. He was a keen and expert musician, was for many years president of the Dover Choral Union, and often took part in public concerts. He retired from practice in 1908, and went to live at Tunbridge Wells, where he died in his 90th year. He had seven sons and four daughters; of his sons only two survive him. Several of them gave their lives for their country in the South African war and in the great war, three dying between 1914 and 1918.

Few men did more loyal and single-hearted work for the British Medical Association. He was secretary of the old South-Eastern Branch from 1871 to 1873, secretary and treasurer of that Branch 1888 to 1891, and president of it in 1893. He was a member of the Central Council from 1888 to 1899 and treasurer from 1896 to 1899. Dying at so great an age and being out of public work since 1908, many of the younger men do not know the great work Parsons did, but he ranks high in the estimation of men who knew him.

Most honourable in all his professional work—the kindest and most sympathetic of men—he was respected by his fellow citizens and loved by all: his work will long remain. He was buried at Dover on Tuesday, March 28th.

W. J. TYSON.

Sir JENNER VERRALL, who succeeded Dr. Parsons as Honorary Secretary of the South-Eastern Branch, writes:

Thinking of Dr. Charles Parsons carries one back to the old days before the present constitution of the Association was devised. Before he became Treasurer of the Association he gave many years of service as Secretary of the South-Eastern Branch (Kent, Sussex, and Surrey). Apart from the Council and the permanent officials the Branch organization was then the sole means by which the influence of the Association could be brought to bear and co-ordinated action be taken. Unless you paid a small extra subscription for the purpose you were not a member of any Branch, and many who were not keen about medico-political work and local meetings remained unattached. For securing as large a proportion of Branch members as possible, for keeping in touch with all parts of a large area, and for fostering corporate feeling in the Branch, Dr. Parsons's energy and patience, his genial presence and kindly nature, were invaluable. We have become accustomed to the very complete machinery now at our service, and only those who remember the less efficient time can realize how much we owe to men like Parsons, pioneer in co-operative efforts.

DR. WALTER DYMOCK PERRY, late Captain R.A.M.C. (T.C.), died at Woking on March 25th, aged 50. He took the M.R.C.S. and L.R.C.P.Lond. in 1895, after which he went to New Zealand, where he was in practice at Timaru, but immediately before the war was practising at Earl's Court. He took a temporary commission as lieutenant in the R.A.M.C. on January 21st, 1915, and was promoted to captain after a year's service.

Universities and Colleges.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examination indicated:

THIRD M.B., B.S. (*Materia Medica, Pharmacology and Pharmacy; Public Health; Medical Jurisprudence; Pathology and Elementary Bacteriology.*)—R. L. Bell, N. Capstaff, Phillis Hall, N. Harkness, R. E. Haswell, J. E. Israel, J. S. Johnson, H. B. L. Levy, G. M. Miller, J. E. D. Miller, Winifred M. Proctor, Margaret Scoresby-Jackson, Kathleen Shelton, D. S. Sinclair, W. F. O. Taylor, P. J. G. de Vos.

UNIVERSITY OF MANCHESTER.

PROFESSOR J. W. SMITH, M.B., F.R.C.S., is resigning at the end of the present session the chair of systematic surgery, which he has held since 1911. The council, in accepting the resignation with regret, have expressed their hearty appreciation of the services rendered by Professor Smith to the university since he joined the staff in 1888.

The following candidates have been approved at the examination indicated:

D.P.H.—*Part I:* Martha F. Barritt, Winifred I. Doherty, Florence M. L. Graham, W. H. Leigh, J. K. Lund, J. G. McKinlay, Constance Snowdon, Doris A. Taylor, Mary I. Turner, Marie Wardman, Frances G. Wilcocks. *Part II:* J. Brooks, Constance Snowdon.

UNIVERSITY OF ABERDEEN.

AT the graduation ceremony held on March 30th the following were among the degrees conferred:

M.D.—*F. W. C. Brown, *J. G. Danson, *M. Y. Garden, R. D. Lawrence.
CH.M.—W. Brander.
D.P.H.—J. S. Anderson, F. Ritchie.
FINAL M.B., CH.B.—W. J. Adam, Agnes M. E. Benzie, J. H. G. van Blommestein, L. S. Chatterji, Evelina I. Corbett, H. W. Corner, J. K. Cumming, T. J. Davidson, *E. G. A. Don, C. Donald, Dorothy J. Dow, Griselda A. Dow, J. A. S. Emslie, S. Feinstein, *F. Forman, †*J. F. Fraser, Jane H. Galloway, F. W. Gordon, J. Grieve, E. D. Gray, H. R. Lambie, †**J. S. Ledingham, J. Lumsden, Elizabeth G. McCurrach, W. R. McGlashan, J. Macleod, Margaret M. Mills, J. Milne, A. W. J. Mitchell, Peggy L. Mitchell, Barbara R. Morton, A. J. Murray, C. Penny, †*S. S. Proctor, P. Ross, Mildred M. G. Russell, I. Sacks, Beatrice M. Sellar, W. F. Shearer, Katherine C. Spence, †*D. MacR. Stewart, Christina Stuart, A. Tait, J. S. Walker, †Annie K. Wattie.

* Distinction. ** Much distinction. † Second class honours.

The following prizes and medals were awarded:

Fife Jamieson Memorial Gold Medal in Anatomy: C. S. D. Don, Jamaica. Keith Gold Medal for Systematic and Clinical Surgery: W. L. Hector, Tarland. Shepherd Memorial Gold Medal for "The Principles and Practice of Surgery": R. N. Ironside, Aberdeen. Dr. James Anderson Gold Medal and Prize of £5 in Clinical Medicine: F. Forman, South Africa, and W. L. Hector, Tarland (equal). The Matthews Duncan Gold Medal in Obstetrics: A. W. Downie, Rosehearty. The Alexander Ogston Prize in Surgery: Edith M. Macrae, Aberdeen.

UNIVERSITY OF DUBLIN.

SCHOOL OF PHYSIC, TRINITY COLLEGE.

THE following candidates have been approved at the examinations indicated:

M.CH.—E. D'A. McCrea.
FINAL M.B., PART I.—*Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene, Bacteriology and Pathology:* *B. Morris, *Agnes McLaughlin, *H. W. L. Dale, H. Renton, R. R. J. Brandt, J. A MacDonald, E. M. Landau, W. E. Hutchinson, J. E. Deale, C. A. V. Ovendale, A. Darlington, F. G. Brown, Martha Reid, S. M. Geffen, J. S. Glasgow, I. Marin, Margaret L. Cowan, A. V. Foster, A. E. O'Donnell, H. Lewin, C. T. MacCarthy, Marie E. Wagener, R. C. L. Griffiths, Etienne R. Hafner, H. R. Brady, C. Gordon, H. J. Hugo, P. F. H. Wagner, Kathleen E. Hill, H. Kohlberg, H. S. Roseman, R. R. D. Crawford, Isabella H. Speedy, A. V. Wood, G. A. A. Powell, J. A. Levett. *Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene:* A. W. Eksteen, M. Jaffe, N. J. V. Van Druten, L. Harris, S. W. Jamieson. *Medical Jurisprudence and Hygiene, Bacteriology and Pathology:* Isobel G. Smith. *Materia Medica and Therapeutics, Bacteriology and Pathology:* Eileen Brangan. *Bacteriology and Pathology:* W. T. Hogan, J. J. FitzGerald, W. L. Duncan, D. J. Malan.

PART II.—*Medicine:* *I. G. Sacks, *C. E. Brunton, M. Bewley, D. Hugo, Olive V. Fair, G. Blackall, W. B. E. McCrea, Ruth Lemon, L. Stazunsky, J. Harte, F. M. Hilliard, I. Marais, May E. Powell, M. M. Viljoen, T. G. Warham, R. Lang, Rita Dillon-Leetch, L. O. Vercueil, C. E. Ovendale, W. B. Briggs, J. E. McCormick, E. R. Murray, C. de L. Shortt, W. S. Dickson, L. Wigoder, J. Hofman, A. E. Drotske, J. Kruger, S. G. Rainsford, J. B. Horan, C. W. Parr, D. H. Saayman, I. P. Myers, D. L. H. Moore, I. F. A. de Villiers, V. Robinson, H. N. Krige, H. C. Dundon. *Surgery:* S. G. Weldon, H. N. Krige, I. Cornick, C. J. U. Murphy, P. H. S. Fouché, Margery Bouchier-Hayes, D. L. H. Moore, W. S. Dickson, F. Malone Barrett, J. Devane, F. B. D'Arcy, R. Dormer, C. W. R. McCaldin, G. S. Moran, H. J. L. Murphy, Vera G. M. Menary, I. F. A. de Villiers, J. G. Russell, A. E. Phillips, W. R. Burns, A. J. Beckett, G. Kirker. *Midwifery:* *G. Bewley, *M. M. Viljoen, M. P. Louw, R. N. Perrott, A. Bernstein, Florine I. Irwin, J. C. Gillespie, W. H. Smith, D. J. Malan, Mary H. Harcourt, I. Marais, I. Cornick, W. E. Callanan, J. Devane, J. B. Horan, D. M. Vellema, J. E. Deane, W. E. Holmes, M. Gallivan, H. J. L. Murphy, N. McI. Falkiner, M. Schwartzberg, H. Hall, F. B. D'Arcy, J. Harte, A. J. Beckett, J. M. O'Connor, S. W. Russell, D. S. Spence.

DIPLOMA, PUBLIC HEALTH, PART I.—*Chemistry, Bacteriology, Physics, and Meteorology:* J. A. Acheson, J. C. P. Beatty, H. C. C. Deane, Alice B. S. Smith, Margaretta T. Stevenson, Edith F. Willock, Nannette Norris, R. V. Dowse.

PART II.—*Sanitary Engineering, Practical Sanitary Report, Hygiene and Epidemiology, Vital Statistics, and Public Health Law:* J. C. P. Beatty, H. C. C. Deane, W. L. Young, Nannette Norris, E. D'A. McCrea, R. W. Power, Edith F. Willock, J. A. Acheson.

* Passed in high marks.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following candidates have been approved at the examinations indicated:

PRIMARY FELLOWSHIP.—Miss Attracta Halpenny, S. O'Neill, C. J. A. Woodside.
FINAL FELLOWSHIP.—E. D'A. McCrea.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FINAL PROFESSIONAL EXAMINATION.—T. A. Bennett, W. A. Benson, P. P. Connolly, Mrs. Michael Brendan Devane, Dorothy H. Douglas, J. Eliassoff, C. J. Ellison, C. V. Falvey, S. Griffin, A. Hayman, H. Levison, B. J. Mulligan, Anna J. O'Reilly, R. B. Shaw, R. Sherowitz, H. E. W. Waters.
D.P.H.—Dr. V. R. O'Connor.

UNIVERSITY OF LONDON.

Correction.—In announcing last week (p. 514) the conferment upon Miss E. E. Hewer of the degree of D.Sc. in Physiology by the University of London, the recipient should have been described as an internal student of the London (Royal Free Hospital) School of Medicine for Women, and not an internal student of Bedford College, as printed.

The Services.

HONORARY PHYSICIANS TO THE KING.

THE following appointments of honorary physicians to the King are announced: Major-General A. P. Blenkinsop, C.B., C.M.G., late R.A.M.C., vice Colonel E. Eckersley, retired, and Lieut.-Colonel and Brevet-Colonel Sir E. S. Worthington, K.C.V.O., C.B., C.I.E., R.A.M.C., vice Major-General J. J. Gerrard, C.B., C.M.G., retired.

ARMY MEDICAL LIBRARIES.

THE War Office announces that it has been decided to establish in the principal military hospitals at home and abroad small libraries of standard books of reference and of current medical literature, in order that officers of the Royal Army Medical Corps may be able to keep themselves informed of advances in medicine and the allied sciences. Each library will form a medical intelligence bureau for the district which it serves and be available for all officers of the corps serving in that district.

Libraries at home stations will be supplied (at the public expense) with Rose and Carless's *Manual of Surgery*; Osler and Macrae's *Principles and Practice of Medicine*; Parkes and Kenwood's *Hygiene and Public Health*; Manson's *Tropical Diseases*; *British Journal of Surgery*; *Journal of Hygiene*; *Medical Abstracts and Reviews*; *Tropical Diseases Bulletin*, and standard works on medical and allied sciences to the total value of £5 annually. The libraries at stations abroad will be supplied with all the above works and periodicals, and, in addition, Rowland and Turner's *Operations of Surgery*; Stitt's *Practical Bacteriology*; Alcock's *Entomology for Medical Officers*; and Hutchison's *Diseases of Children*. Standard works will be allowed up to the value of £9 annually.

Each library will be placed under the care of an officer to be selected by the Deputy Director of Medical Services of the command from the staff of the hospital in which the library is situated.

FOREIGN DECORATIONS.

THE following are among the decorations awarded by the Allied Powers for distinguished services rendered during the war.

By the King of the Belgians.—Ordre de Leopold—Officier: Colonel Charles Alfred Hodgetts, C.M.G., Canadian Army Medical Corps. Ordre de la Couronne—Officier: Brevet-Colonel James Paul Bush, C.M.G., C.B.E., T.D., R.A.M.C., T.F.

By the President of the French Republic.—Légion d'Honneur—Chevalier: Temporary Captain Charles Gerald Harmer, R.A.M.C.

By the King of Italy.—Silver Medal, "Al Merito Della Sanita Pubblica": Major-General Sir F. R. Newland, K.C.M.G., C.B.

Medical News.

AT the Aberdeen University graduation ceremony on March 30th the honorary degree of LL.D. was conferred upon Professor Thomas Wardrop Griffith, C.M.G., M.D., F.R.C.P., professor of medicine in the University of Leeds.

THE Morison lectures before the Royal College of Physicians of Edinburgh will be delivered by Professor G. Elliot Smith, F.R.S., on May 1st, 3rd, and 5th, at 5 p.m.; the subject is The Evolution of the Human Intellect.

AT a meeting of the Central Midwives Board for England and Wales, held on March 23rd, with Sir Francis Champneys in the chair, four midwives who had been cited were struck off the Roll.

THE inquiry of the Mosquito Investigation Committee of the South-Eastern Union of Scientific Societies into the habits of *Anopheles plumbeus* was hindered by the drought of last summer. It is proposed to resume the investigation, and information as to the particulars required can be obtained on application to the Rev. T. W. Oswald-Hicks, Lesware, Linden Road, S.E.15.

IN Sweden, according to a recent decision of the Lower Court of Appeals at Stockholm, medical practitioners cannot in future be compelled to give evidence in court against their will in cases with which they have been professionally connected.

THE Rockefeller Foundation has given 6,000,000 dollars to the Johns Hopkins University for the school of hygiene and public health; of this sum 1,000,000 dollars is to be available for the erection of new buildings for the school and 5,000,000 dollars for an endowment covering its maintenance. Work on the main building is expected to start this summer.

ARRANGEMENTS have been made for six lectures to be given, in English, by English lecturers, in the grand amphitheatre of the Faculty of Medicine of Paris: on May 6th Sir Sidney Russell-Wells will lecture on the circulatory effects of mitral stenosis and aortic regurgitation; on May 11th, Sir Wilmot Herringham, on trench fever; on May 13th, Dr. Sampson Handley, on lymphatic pathology, with special reference to malignant disease; on May 18th, Professor E. H. Starling, on the mechanism of compensation in the heart; on May 20th, Mr. H. J. Waring, on acute pancreatitis, its diagnosis and surgical treatment; on May 27th, Professor G. Elliot Smith, on stereoscopic vision and the evolution of man.

DR. BEDFORD PIERCE, on the occasion of his resigning the post of medical superintendent of the York Retreat Mental Institution, has been presented with many farewell gifts, including cheques of £105 and £100 from the committee and past and present members of the staff respectively, a portrait in oils of himself as a personal gift from the committee, with a replica to hang in the board room. He has been appointed consulting physician to the Retreat. Mrs. Pierce has also received a number of gifts.

AT the annual meeting of the Society for the Study of Inebriety to be held at 11, Chandos Street, W.1, on Tuesday, April 11th, at 4 p.m., Dr. Edgar L. Collins, Talbot professor of preventive medicine in the University of Wales, will open a discussion on the use of alcohol by the industrial worker.

THE King has approved the appointment of Lieut.-Colonel James Young, M.D., T.D., as a deputy lieutenant for the county of Gloucester.

THE first three Friday evening discourses after Easter at the Royal Institution of Great Britain will deal with medical or biological subjects. On April 28th Professor Arthur Harden, F.R.S., head of the Biochemical Department, Lister Institute, will speak on vitamin problems; on May 5th Dr. Michael Grabham will describe some of his biological studies in Madeira; and on May 12th Dr. H. H. Dale, F.R.S., director of the Department of Biochemistry and Pharmacology at the National Institute for Medical Research, will discuss the search for specific remedies. On June 9th Mr. Joseph Barcroft, F.R.S., reader in Physiology in the University of Cambridge, who has recently paid a visit to the Andes in company with Professor Meakins of Edinburgh, will relate some of the results of their investigations into the physiological effects at high altitudes. The discourses will be given at 9 p.m.

THE report presented at the annual meeting of the Cremation Society of England on March 29th showed that the number of cremations in Great Britain in 1921 was 1,922, about 100 below the maximum figure which was reached two years ago. Altogether, since the opening of the first crematorium at Woking in 1885, there have been 25,418 cremations. Nearly half the cremations take place at Golders Green, but there are thirteen other crematoriums in England and one in Scotland, and other schemes for erecting crematoriums are well advanced, especially one at Pontypridd. According to one speaker at the annual meeting (Mr. A. E. Bernays), every thousand ordinary burials in single graves occupy an acre, so that the encroachments of the cemetery in urban districts, if the present method of disposing of the dead continues, can be forecasted. The practice of cremation, so far from destroying sentiment, would make it possible to revert to the old practice of intramural interment. Sepulture in churches would no longer be forbidden by sanitary law, and Westminster Abbey, where few or no more bodies can be buried, might continue indefinitely to receive the cremated ashes of famous men and women. The Cremation Society, which has recently changed its address to 52, New Cavendish Street, W., has a life membership scheme which includes the prepayment of cremation fees, and this is an advantage, especially in the provinces, where cremation fees are higher than in London owing to the comparatively small number of cremations which are carried out.

THERE was a slight increase in the number of deaths from influenza in the week ending April 1st; the figures for the 105 great towns were 113, as against 104 in the previous week; and for London 21, as against 17.

AT the meeting of the London County Council on April 4th Dr. Edward Mapother, deputy medical superintendent of the Long Grove Mental Hospital, was appointed medical superintendent of the Maudsley Hospital. Each candidate for the post was informed that the appointment would be held subject to the pleasure of the Council, which would be exercised at the expiration of six years at latest. The salary is to be £900 a year, on a pre-war basis, and the approved temporary additions bring the amount up to £1,200 a year. It is understood that the superintendent is to be permitted to practise as a consultant so far as this is consistent with his duties at the hospital. In the selection of the candidate two eminent psychologists, nominated by the University of London, gave the Asylums Committee the benefit of their views.

THE North-East London Post-Graduate College will hold a special intensive course at the Prince of Wales's General Hospital, Tottenham, N.15, from Monday, May 15th, to Saturday, May 27th, inclusive. It will include demonstrations, in the mornings, of clinical and laboratory methods, groups of illustrative cases, etc., and on Saturday mornings practical demonstrations in associated hospitals. The afternoons will be devoted to general hospital work with clinics in the various departments, which will be followed each afternoon by a clinical lecture dealing more especially with the treatment of disease. The first of the series of clinical lectures will be given by Sir Thomas Horder, M.D., on "Some clinical types of arthritis and their treatment." Luncheon will be obtainable in the neighbourhood of the hospital, and tea will be provided each day. It is expected that the syllabus will be available before Easter.

THE membership of the Tuberculosis Society of Scotland is now nearly 70; the President for the current session is Professor Sir Robert Philip, P.R.C.P.Edin., the honorary secretaries are Dr. W. Leslie Lyall and Dr. Ian Struthers Stewart, the honorary treasurer is Dr. Macrae Taylor, and the Editor of the *Transactions* Dr. A. Fergus Hewat. The Society holds regular meetings for discussion; the next will take place on Friday, April 28th, at 4 p.m., in the New University Buildings, Edinburgh.

THE house and library of the Royal Society of Medicine, 1, Wimpole Street, W.1, will be closed from Thursday, April 13th, to Tuesday, April 18th, both days inclusive.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard.

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

P. S." has ceased to use his own car and is hiring from a jobmaster as occasion requires. Has he any claim in respect of the loss incurred in connexion with the former purchase of his now useless car?

*** No. A claim to depreciation cannot be made in connexion with an assessment of professional as distinct from trade profits; he is entitled to the cost of replacement only, and in the circumstances there was no such outlay. The point was raised before the Royal Commission on Income Tax, and that body recommended that this distinction should be abolished, but that has not yet been effected. With regard to the purchased premises, "P. S." can deduct in lieu of the rent the amount on which he is assessed to Property Tax—that is, Income Tax Sch. A.

LETTERS, NOTES, ETC.

SLIPPING RIB.

DR. EDGAR F. CYRIAX (London, W.1) writes with reference to Mr. R. Davies-Colley's communication on slipping rib (March 18th, p. 432), to point out that this condition of the rib has been described by him in the *Practitioner* for June, 1919, and also that Stiller (*Die asthenische Konstitutionskrankheit*, 1907) essayed under this title to establish a clinical entity one of whose most constant symptoms was looseness of the tenth rib.

COUÉ AND DUBOIS.

DR. N. W. MARKWELL (London) writes: M. Coué has recently been credited with bringing forward a new principle in connexion with his so-called "Law of Reversal of Effort." The name and explanation of the mechanism involved are new, but the description and the use of the mechanism are not. Professor Paul Dubois (*The Psychic Treatment of Nervous Disorders*, English translation by Jelliffe and White, 1907) enunciated the mechanism clearly enough for others to grasp it and to use it in practice. It is a main feature in his persuasive method. . . . The whole book expounds this mechanism. For example (p. 155) he states: "If we can, by a healthy philosophy of life and by moral hygiene suppress this toxic element of emotion we shall rid the greatest physical and intellectual fatigue of its harmful influence." In this and other passages Dubois points out unequivocally that a fundamental psychological principle which is of the greatest utility in practice does exist. One may not agree with Dubois's psychology and metaphysics, nevertheless we are in his debt, and not in the debt of M. Coué. For some years I have been in the habit of designating the mechanism "The Positive Reaction."

AESCULAPIUS AND CONSUMPTION.

MR. MORLEY ROBERTS (London) writes: Doubtless most physicians have read Sir Thomas Browne's *Religio Medici*, and it is possible that some may even have looked into his essay entitled *On Dreams*, but I have never seen any comment on the passage in the latter piece which runs: "And a man might be hard put to it to interpret the language of Aesculapius, when, to a consumptive person, he held forth his fingers, implying thereby that his cure lay in dates, from the homonymy of the Greek, which signifies dates and fingers." As our learned author does not quote his authority, it is hard to say where this comes from, but it seems capable of an interesting interpretation. As Hippocrates was of the family of the Asclepiadae, one of whose chief seats was Cos, this saying may possibly be found in his works or the pseudo-Hippocratic writings. Perhaps some student of Hippocrates can tell me if this is so. It seems to me that this cryptic saying may be regarded as sound advice. Suppose that the physician's comment was, "By this I do not mean dried dates but fresh ones. Go where you can get them daily. I suggest Egypt as the handiest place where the date tree flourishes." If my suggestion is correct one may infer that modern doctors, when they recommend the dry, pure desert air, are but following, without knowing it, the advice of some unknown Greek colleague, unless Browne really meant Hippocrates when he wrote of the mythical Aesculapius.

FIRST AID TO THE INJURED.

SQUADRON LEADER W. ROUS KEMP, R.A.F.M.S., writes to call attention to the fact that the present edition of the St. John Ambulance Association's *First Aid to the Injured*, which has been rewritten by Dr. R. Bruce, was originally compiled by the late Surgeon-Major Peter Sheppard, R.A.M.C., who was killed at the Battle of Isandula, Zululand, in 1879. Our correspondent considers that this small volume, which has been the origin and foundation of all first aid work, ought still to retain, as a lasting memorial to him, the original author's name, which, he says, used to appear in the earlier editions.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 33, 36, 37, 38, and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 34 and 35.

THE following appointments of certifying factory surgeons are vacant: Brynmawr (Brecon), Carlisle (Cumberland).

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.